COMBAT AIRCRAFT 157

Matthew Willis

SWORDFISH UNITS OF WORLD WAR 2

SERIES EDITOR TONY HOLMES

157 COMBAT AIRCRAFT

Matthew Willis

SWORDFISH UNITS OF WORLD WAR 2

OSPREY PUBLISHING

COMBAT AIRCRAFT

157 SWORDFISH UNITS OF WORLD WAR 2

CONTENTS

INTRODUCTION 6

CHAPTER ONE
OUTBREAK OF WAR TO THE FALL OF EUROPE 8

CHAPTER TWO
OLD ALLIES, NEW ADVERSARIES 23

CHAPTER THREE
EASTERN MEDITERRANEAN 29

CHAPTER FOUR
EAST AND WEST OF GIBRALTAR 56

CHAPTER FIVE
MEDITERRANEAN SHORES 68

CHAPTER SIX
EAST OF SUEZ 75

CHAPTER SEVEN
CONVOY ESCORT 80

CHAPTER EIGHT
HOME WATERS 86

APPENDICES 91

COLOUR PLATES COMMENTARY 92
SELECTED BIBLIOGRAPHY AND SOURCES 95
INDEX 96

The sole Fairey TSR in the form in which it first flew on 21 March 1933. The Armstrong Siddeley Panther VI engine seen here was later replaced with a Bristol Pegasus IIM, and in this configuration it was lost in a crash on 11 September that year due to an unrecoverable spin. The redesign necessary to prevent a recurrence included a longer rear fuselage, greater wing sweepback and a larger fin, these developments creating the final form of the Swordfish (*Author's Collection*)

INTRODUCTION

The Fairey Swordfish was the most important combat aircraft of the Royal Navy's Fleet Air Arm (FAA) for most of World War 2, playing a vital role in the Mediterranean, the Battle of the Atlantic and in numerous smaller theatres. The FAA's Swordfish units were heavily involved in some of the greatest triumphs of the Royal Navy before slipping seamlessly into the role of convoy protection. While its most spectacular victories are well known, the Swordfish contributed vastly in quiet, unglamorous ways such as often uneventful reconnaissance flights and interminable anti-submarine patrols. The Royal Air Force (RAF) operated the Swordfish in small numbers too, taking advantage of the aircraft's unique capabilities to support its own coastal operations.

While the Swordfish was approaching obsolescence even before the war, its toughness, manoeuvrability and forgiving handling, combined with the arrival of technology such as radar and new weapons, helped the FAA's squadrons achieve astonishing successes.

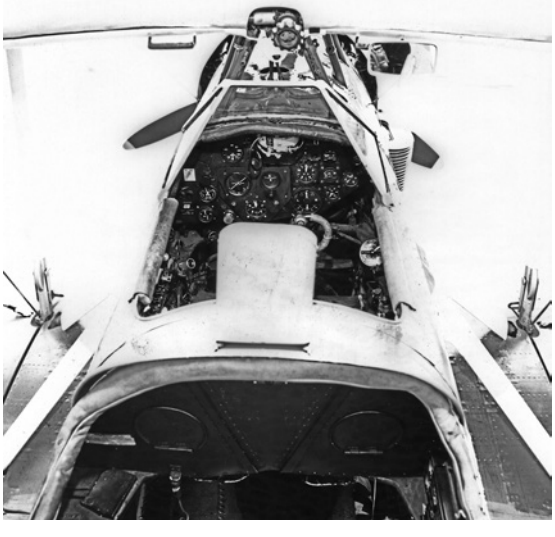
The Swordfish emerged from a series of specifications for naval aircraft in the late 1920s and early 1930s, when the FAA began to push for multi-role aircraft to replace its three main frontline classes – the torpedo-bomber, the spotter-reconnaissance aircraft and the fighter. The specification for a 'torpedo-spotter-reconnaissance' aircraft, abbreviated as TSR, was issued in early 1934.

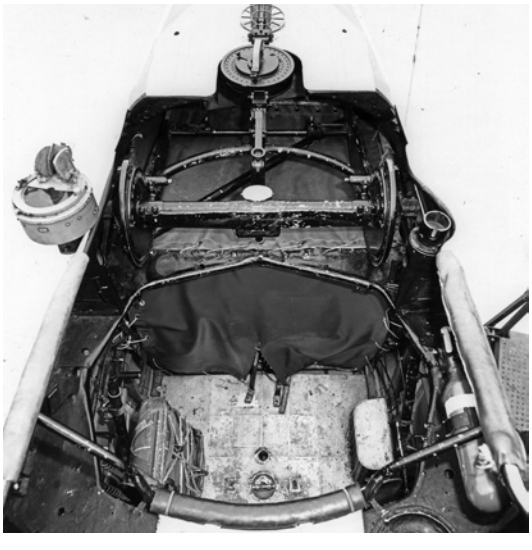
OPPOSITE
The basic but functional 'office' of the Swordfish. For much of the war, the open cockpits were considered an advantage for visibility, but they could be extremely uncomfortable for the crew, particularly in cold conditions. Furthermore, the TAG, sat in the aft cockpit, was constantly battered by the slipstream from the propeller (*Crown Copyright*)

An evocative study of a pre-war formation of Swordfish Mk Is from the Torpedo Training Unit at Gosport, in Hampshire, in 1938–39. A month before war broke out in September 1939, the nearest aircraft, K5956, was lost in an accident. All four Swordfish would see out their lives in the unglamorous but vital training role (*Author's Collection*)

In fact Fairey had already developed a multi-role torpedo, bomber and reconnaissance design for the Hellenic Navy as a private venture. The 'Greek Machine', as it was known colloquially to the company, first flew on 21 March 1933, a year ahead of the Air Ministry specification. The Fairey TSR was a conventional biplane with an all-metal structure – steel fuselage frame and wing/tail spars, with light alloy ribs – and fixed undercarriage. The prototype was powered by an Armstrong Siddeley Panther VI, later replaced by a Bristol Pegasus IIM.

The prototype crashed in September 1933 while undergoing test flights, having entered an unrecoverable spin. The aircraft was redesigned to improve its spin characteristics, with a stretched fuselage, larger tail fin and increased wing sweep. The second prototype, built as quickly as possible, first flew on 17 April 1934 and undertook its official trials between August and October. Finally, a production order for 86 aircraft was placed in April 1935, whereupon the name Swordfish was bestowed, and further orders soon followed. The first production aircraft were delivered to the FAA in July 1936 and entered squadron service later that year. It was expected that the Swordfish would be in production until November 1939, its successor beginning production the following month to enter service sometime in early 1940 and steadily replace the Swordfish thereafter.





CHAPTER ONE

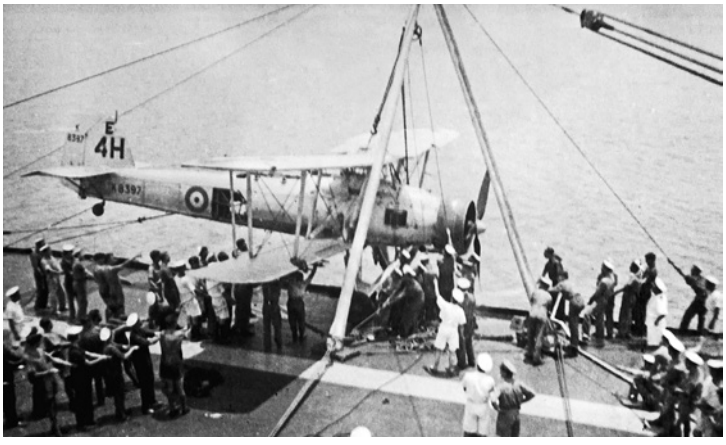
OUTBREAK OF WAR TO THE FALL OF EUROPE

Swordfish 645 of 820 NAS takes off from *Ark Royal* in 1939 – this unit was the first to land aircraft aboard the newly commissioned carrier in January of that year – while another aircraft flies overhead. 820 NAS, along with two other Swordfish units, undertook a series of dangerous raids on shore targets from *Ark Royal* during the Norwegian campaign of 1940, as well as flying vital but generally unremarkable reconnaissance and anti-submarine patrols (*Naval History and Heritage Command (NHHC)*)

At the outbreak of war in September 1939, there were 13 frontline FAA naval air squadrons (NASs) operating the Swordfish. Two catapult units were also partially equipped with Swordfish floatplanes, 701 and 702 NASs equipping the 1st and 2nd Battle Squadrons, respectively. The remaining 11 were fleet TSR units attached to the five fleet aircraft carriers in commission. These were 810, 818 and 820 NASs aboard HMS *Ark Royal* with the Home Fleet, 811 and 822 NASs aboard HMS *Courageous* on trade protection, 812, 823 and 825 NASs aboard HMS *Glorious* with the Mediterranean Fleet, 813 and 824 NASs aboard HMS *Eagle* on the China Station and 814 NAS aboard HMS *Hermes* in the Channel. HMS *Furious* recommissioned shortly before the outbreak of war and did not have permanent Swordfish squadrons, for it had been employed training pilots.

The standard aircraft complement aboard carriers in September 1939 was two TSRs to one fighter. These arrangements began to change by force of necessity almost as soon as hostilities were declared.

The Admiralty was expecting a war of trade protection. While the British Expeditionary Force fought in Europe, the Royal Navy would keep Britain's supply lines open while hampering the enemy's supply lines as much as



Finished in pre-war, factory-applied, overall aluminium-doped fabric and Cerrux Grey-painted metal surfaces, Swordfish Mk I K8397 E4H of 813 NAS is recovered to *Eagle*'s flightdeck after running into the vessel's catwalk during operations on the China Station in September 1939 (*Author's Collection*)

possible. In the first months of the conflict, this scenario appeared to be playing out.

As soon as war was declared on 3 September 1939, the British government adopted a convoy system for merchant shipping, although it was initially voluntary and took time to implement. Within hours of hostilities commencing, German U-boats had claimed their first victim, with U-30 torpedoing the transatlantic passenger liner *Athenia* in contravention of the rules of war. A steady stream of sinkings by U-boats followed over the coming days, totalling 11,000 tons per day.

The Admiralty, under the leadership of the First Lord, Winston Churchill, attempted to take the fight to the U-boats, with groups of warships hunting them in the Western Approaches – the zone of the Atlantic to the west of Britain and Ireland. Fleet aircraft carriers were included in these groups, with *Courageous*, *Hermes* and *Ark Royal* taking part in the early days by sending their Swordfish aloft to scout ahead of the warships. With no means of detecting submarines other than visually, it was expected that the presence of the aircraft would cause any submarines to submerge, whereupon they could be detected by the escorts' ASDIC (Sonar) and attacked. The Swordfish could, if they caught a U-boat by surprise on the surface, attack with 100-lb anti-submarine bombs. The tactic was flawed, based on an overestimation of the effectiveness of ASDIC in its current state. Moreover, the 100-lb anti-submarine bomb was almost entirely ineffectual, a later investigation describing its design as 'shocking', 'criminal' and 'disgraceful'.

Ark Royal sailed from Scapa Flow, in the Orkney Islands, with four destroyers on 11 September. Three days later, northwest of the Hebrides, the carrier was narrowly missed by a spread of torpedoes launched by *U-39*. The escorts succeeded in sinking the submarine and capturing its crew. The significance of the close call *Ark Royal* experienced was missed in light of the success against the U-boat, for on 17 September *Courageous,* patrolling southwest of Land's End, was hit by two torpedoes launched by *U-29* and sank 19 minutes later. *Courageous* had launched four Swordfish to respond to a reported U-boat sighting, but it was not flying a standing patrol. Both of *Courageous*' Swordfish squadrons were disbanded after the sinking, the surviving personnel posted to other units or retained to be the core of new ones as they formed.

The War Cabinet was shocked by the loss of *Courageous,* leading to a discussion 'as to whether the operations of aircraft carriers in the protection of trade were of sufficient value to outweigh the risk of their loss'. The War Cabinet's fears extended mainly to *Ark Royal*, which was the Royal Navy's only modern carrier in commission, and it recommended that the vessel be withdrawn from anti-submarine operations.

Contrary to most accounts, the incident did not lead to the immediate cancellation of anti-submarine carrier patrols. While *Ark Royal* was indeed immediately ordered back to Scapa Flow, *Hermes* did not return to Plymouth until 20 September, whereupon it immediately entered a period of dockyard maintenance. By the time the carrier emerged, the naval situation had changed significantly with news of surface raider attacks on shipping in the South Atlantic and Indian Ocean.

The Deutschland-class *panzerschiff* ('Pocket Battleship') *Admiral Graf Spee* had taken up position in the Atlantic before the war, and it was ordered to start attacking British shipping on 20 September. Reports of its exploits started to reach the Admiralty in early October, and the Royal Navy and the French *Marine Nationale* formed a series of hunting groups, each of which was to be powerful enough to defeat the *panzerschiff* by itself. Five groups included aircraft carriers, four of them Royal Navy vessels – *Eagle* with Force I in the Ceylon area, *Glorious* with Force J outside the Gulf of Aden, *Ark Royal* with Force K patrolling off Brazil and *Hermes* with Force N in the West Indies.

At the same time, *Furious* was made operational and embarked 816 and 818 NASs, the latter borrowed from *Ark Royal*, to cover the loss of *Courageous* while the other four frontline carriers hunted for *Admiral Graf Spee*. The following month 815 NAS was formed as a spare unit.

The Swordfish of *Eagle*, *Ark Royal*, *Hermes* and *Glorious* patrolled thousands of miles in October–November 1939 with little result. In fact, Force K passed the *panzerschiff* as it sailed back into the Atlantic from the Indian Ocean in late November, just outside the patrol range of the Swordfish. In December, the weather in *Ark Royal*'s patrol area worsened to the degree that flying was only possible one or two days a week. This made it impossible to ensure that a raider could not slip through. Occasional reports were received from merchant ships which did little more than indicate the general area in which *Admiral Graf Spee* was operating. In mid-November, *Hermes*' assignment changed and it began operating from Dakar with French cruisers.

On 13 December, when the *panzerschiff* was caught and brought to battle by the three Royal Navy cruisers of Force G, Force K with *Ark Royal* was running low on fuel and could not immediately come up in support. The ships topped up their bunkers at Rio de Janeiro, in Brazil, and sailed south for the River Plate, ready to meet *Admiral Graf Spee* if the vessel left the safety of the Uruguayan capital, Montevideo. Instead, the raider was scuttled in the Plate estuary the day before *Ark Royal* was due to arrive. With no enemy warship to engage, Force K was tasked with escorting the heavy cruiser HMS *Exeter*, which had been badly damaged during the battle with *Admiral Graf Spee* on 13 December, back to Britain. The carrier arrived at Portsmouth on 15 February 1940.

Hermes returned as part of the escort for convoy SLF 14 from Freetown, in British Sierra Leone (now simply Sierra Leone), before sailing to Dakar, in then-French West Africa (now Senegal), in February. *Glorious* and *Eagle* had uneventful patrol periods in the Indian Ocean. In January, *Glorious* returned to the Mediterranean via the Suez Canal, while *Eagle* remained until early March, when it sailed for Singapore for a refit. While stowing ordnance after a training flight, a 250-lb bomb went off in the bomb room, killing several

crewmembers, causing damage to the ship, setting fire to a Swordfish and damaging many others through being sprayed with salt water.

The last of 692 Swordfish built by Fairey had been delivered on 30 November 1939. The Admiralty estimated that to keep up with losses, like those suffered by the units on *Eagle*, and allow for expansion, it would need to receive 40 TSRs a month. In fact, the number fell to almost zero in late 1939 when Swordfish production ended and deliveries of the aircraft's successor in the form of the Albacore (also built by Fairey) were only beginning. The Admiralty and Air Ministry discussed the situation, and initially proposed that a second production line of Albacores be set up by Blackburn. This would still mean a long period before the requisite 40 airframes a month would be available, however.

Another option was for Blackburn to build Swordfish instead, although the Admiralty noted 'the performance of the Swordfish is substantially inferior to that of the Albacore in several respects'. The main advantage was that Blackburn could take over most of the now-redundant jigs and tools from Fairey. The Swordfish also used less light alloy than the Albacore, and it was cheaper to build. Finally, the aircraft's 690 hp Pegasus IIIM3 engine was cheaper to acquire than the 1130 hp Bristol Taurus XII engine fitted to the Albacore.

Even with 85 per cent of existing tooling handed over to Blackburn, it took months to set up the production line to begin work. Blackburn ordered raw materials in December 1939, but with extreme pressure on resources, almost a year had passed before enough material had been received and new sub-contractors engaged to commence the construction of the 300 Swordfish initially ordered. Blackburn would go on to build 1699 Swordfish, 1007 more than the parent company

NORWAY

During the afternoon of 7 April 1940, the Admiralty realised that German forces were about to invade Norway. Both Germany and the Allies were increasingly nervous about the consequences of Scandinavian iron ore falling under the control of the other, and took steps to forestall such a situation. The more tentative Allied plan involved mining Norwegian coastal waters and, if Germany retaliated, landing troops in Norway. Minelaying began on 7 April, by which time the German plans for a full invasion and occupation of Norway and Denmark were underway, and several groups of warships were spotted heading north towards the Norwegian coast.

Furious was in the Clyde on the afternoon of 8 April when it was ordered to urgently embark aircraft and sail for Norway. The carrier's two squadrons of Swordfish, 816 and 818 NASs, were nearby at Campbeltown. Unfortunately, its squadron of Blackburn Skua dive-bombers/long-range fighters was at distant Evanton, near Inverness, and it would have taken too long to embark the unit, so *Furious* sailed the next morning with only its TSRs aboard. The carrier rendezvoused with the Home Fleet north of the Shetlands.

In the meantime, the fleet received reports from RAF reconnaissance aircraft of Kriegsmarine cruisers at Trondheim (German forces had invaded

Denmark and Norway on 9 April), and the two Swordfish units prepared to launch a torpedo attack as soon as *Furious* arrived on station. Within 20 minutes of the fleet sighting the Norwegian coast at 0350 hrs on 11 April, 816 NAS was in the air, followed 20 minutes later by 818 NAS. The ships identified in the reconnaissance reports were the heavy cruiser *Admiral Hipper* and four destroyers – Group 2 of the invasion force. By the morning of the 11th, however, only two destroyers remained in Trondheimfjord.

The Swordfish of 816 NAS spotted a destroyer that appeared to be at anchor inshore and made an attack on it. *Z6 Theodor Riedel* had actually been beached on a sandbar to protect the entrance to the fjord, and the Swordfish attacking it found their torpedoes harmlessly grounding in the shallow water. When 818 NAS arrived, it spotted another destroyer – probably Z8 *Bruno Heinemann* – underway, and attempted to attack. The vessel was able to use its speed and nearby high ground to prevent the Swordfish from making a good approach, and no hits were scored on it either. Later that morning, an armed reconnaissance of two Swordfish carrying 250-lb bombs once again attempted to attack *Theodor Riedel* but failed to score any hits, although the crews involved brought back useful information.

On 12 April the fleet moved to Vestfjorden, the wide inlet bounded by the Lofoten Islands to the northwest and the Norwegian coast to the southeast that eventually leads to Narvik, the centre of the Norwegian iron ore industry. Two days earlier, German destroyers from Group 1 of the invasion force were refuelling at Narvik after disembarking troops when they were attacked by Royal Navy destroyers. With the arrival of the main British fleet on the 12th, eight of the Kriegsmarine warships were trapped.

That evening, *Furious* prepared a bombing attack by 18 aircraft from both Swordfish squadrons, combined with photographic reconnaissance. This time 818 NAS launched first, followed 40 minutes later by 816 NAS in worsening weather. The first squadron 'got through and delivered a dashing attack at low altitude' in the face of heavy defensive fire from the warships, while 816 NAS could not locate the warships in the tangle of islands and had to return without attacking. They were lucky to do so in the gathering dark and cloud, with smoke puffs and searchlights used to help guide the aircraft back. To make matters worse, the carrier was pitching heavily.

Three Swordfish were lost, with two from 818 NAS falling to anti-aircraft fire and one from 816 NAS crashing upon landing, although all the crews were recovered. Several more aircraft of 818 NAS were damaged, reducing the carrier's number of serviceable Swordfish to 13. However, the photographs taken and intelligence gleaned by the crews involved helped the fleet's senior officers plan the following day's operations (subsequently known as the Second Naval Battle of Narvik – the first naval battle had occurred on 10 April), aimed at dealing with the enemy warships once and for all.

The battleship HMS *Warspite*, supported by destroyers and aircraft, was to approach Narvik and bombard the enemy destroyers in their anchorage. One of *Warspite*'s 700 NAS Swordfish floatplanes would scout ahead and, if necessary, spot for fall of shot. *Furious*' Swordfish had to carry out several

roles at once due to the limited number of aircraft embarked – an anti-submarine patrol ahead of *Warspite* as it entered the fjord; patrols over Ofotfjord, the final approach to Narvik and Barøya (an island guarding its entrance); and, finally, a bombing attack on the destroyers themselves. Timing was critical, and all the aircraft had to arrive at their appointed areas to coincide with *Warspite*.

Once again the weather made for an extremely challenging flight. The aircraft sent to patrol Barøya managed to scout the island for defences and subsequently signal to *Warspite* that the way was safe, but the Ofotfjord patrol could not find a break in the weather. The strike force of nine aircraft, led by Royal Marine Capt A R Burch, picked its way through the neck at the entrance to Ofotfjord with the cloud down to 500 ft. Once through, the cloud lifted and the Swordfish found the Royal Navy destroyers going into action. They dived on the enemy ships and claimed two direct hits with 250-lb bombs, although probably no hits were scored, while two more Swordfish were brought down.

The commander of *Furious*, Capt T H Troubridge, suggested that 'The arrival of the Fleet Air Arm at the psychological moment added a finishing touch', while commending the navigation and flying in extreme conditions. While carrier-based Swordfish had not made a decisive contribution to the battle, crews from 816 and 818 NASs proved the ability of the FAA to work in concert with surface vessels in battle, even in bad weather, while their ability to provide strike, anti-submarine and reconnaissance tasking even with limited numbers of aircraft was noteworthy.

The 700 NAS Swordfish launched by *Warspite* also made a significant contribution. Scouting ahead of the battleship, PO F C Rice and Observer Lt Cdr W L M Brown spotted the submarine *U-64* and attacked it with two bombs. The weapons in question are often reported as 100-lb anti-submarine bombs, but it seems likely they were in fact 250-lb general purpose (GP) or semi-armour piercing (SAP) bombs.

In any event, the attack blew a hole in *U-64*'s bow and the submarine sank in minutes. Rice and Brown continued with their patrol as the battleship crept along the fjord, and they spotted the destroyer Z13 *Erich Koellner* lying in wait at the narrows. This was reported to the destroyers HMS *Eskimo* and HMS *Bedouin*, which sank *Erich Koellner* before it had a chance to come into action.

The aftermath of the Second Naval Battle of Narvik on 13 April 1940, which Swordfish from *Furious* and *Warspite* took part in, including sinking a submarine (*Author's Collection*)

After the Second Naval Battle of Narvik, *Furious* was detailed to refuel and remain on station while the majority of the fleet withdrew. The tanker was not expected for a few more days, so *Furious* continued operating in the Narvik area to conduct reconnaissance and attack targets of opportunity. On 15 April a patrol spotted a group of 11 Ju 52/3m transports on the frozen Hartvikvatnet lake, these having flown supplies

into Narvik. Nine Swordfish under the command of Lt Cdr H H Gardner from 816 NAS flew off that evening to attack them. Two were reported as destroyed, while the crews involved considered that the rest must have been damaged by blast and shrapnel.

Furious was attacked by a bomber on the 18th, and two bombs missed the ship 'by inches' and the shock damaged one of the carrier's turbines. With no Skuas aboard, *Furious* would be too vulnerable at Tromsø, while the attrition of its Swordfish soon reduced the number of available aircraft to nine. This meant that flying operations could only take place when absolutely necessary.

Furious returned to the Narvik area on 20 April for another planned attack on German forces, which were now surrounded. Its Swordfish were sent up in ones and twos on patrol in the hope that this would discourage the Luftwaffe from attempting to resupply the garrison from the air. These were dangerous and exhausting flights, often in bad weather, and several more aircraft and crews were lost. The carrier developed problems in another of its turbines, and on the 25th *Furious* set out for home. The remaining Swordfish maintained an anti-submarine patrol for the next three days, and the carrier arrived off Greenock on 29 April.

The three weeks *Furious* operated off Norway provided many lessons for the FAA. Although air and maintenance crews had performed well in difficult circumstances, the level of attrition was sobering. The Swordfish conducted valuable reconnaissance and anti-submarine work, but direct attacks on the enemy had been relatively ineffectual. Capt Troubridge wrote, 'It is clear that the Swordfish being so slow is a most unsuitable machine for low flying attacks unless the element of surprise is present. All of the 18 machines [embarked] save one were hit at one time or another and there were many lucky escapes'.

The Swordfish was unsuited to the Norwegian campaign, having not been designed with inshore operations in mind. The next phase of the fighting for Norway took place without *Furious*, which required repairs, while its squadrons needed to rebuild their strength. The FAA's role in the campaign throughout May would be far more focused on support of ground forces, and as a result the Skua took over as the main FAA type in action.

The nature of FAA operations changed too. While the focus for *Furious* in April had been the northern ports, when *Ark Royal* (with 810 and 820 NASs' Swordfish aboard) and *Glorious* (which on this cruise had no Swordfish embarked) arrived towards the end of the month, they would chiefly operate in support of Allied troops further south. When German forces invaded Norway, the two carriers were ordered to sail from the Mediterranean where they had been training. They arrived in time to provide air support to Allied landings at Åndalsnes and Namsos from 24 April, the FAA's contribution being codenamed Operation *DX*.

Air cover to the troops on the ground was typically provided by Skuas, and a small number of RAF fighters transported aboard *Glorious* to operate off temporary airstrips in Norway. *Ark Royal*'s Swordfish would instead provide indirect support, as well as undertaking the unglamorous but vital work of anti-submarine patrols and reconnaissance.

On 25 April, a raid on targets around Trondheim was staged, with eight Swordfish from 810 NAS and six from 820 NAS being involved in the

operation. Targets were Vaernes airfield, floatplanes on Jonsvatnet lake and ships and floatplanes in and around Trondheim harbour. The two Swordfish squadrons took the defences at Vaernes by surprise, bombing hangars, huts, runways and parked aircraft, with six seaplanes reported out of action and a petrol dump set ablaze. No Swordfish were shot down, but two aircraft from 810 NAS and one from 820 NAS force-landed in the sea on the return flight, while an 810 NAS aircraft had ditched shortly after take-off due to engine problems.

Huge pressure was placed on *Ark Royal* at this time as *Glorious*, after flying off the RAF fighters, withdrew to refuel. The single carrier was ordered to provide round-the-clock fighter cover over Åndalsnes and undertake further raids on Trondheim. Vice-Admiral L V Wells, in command of the aircraft carriers in the squadron, argued that it was impossible for *Ark Royal*'s aircraft to achieve this in addition to maintaining the essential anti-submarine and combat air patrols. His protests fell on deaf ears.

A second attack on Trondheim was scheduled for 28 April, with 12 Swordfish of 810 and 820 NASs followed by six Skuas. The one hangar remaining after the previous raid was successfully bombed, but anti-aircraft fire was heavier than before and all the Swordfish received damage, though none serious. One Swordfish was also flown off to provide photographic reconnaissance of fortifications around Trondheim, sighting and attacking a submarine on its way back to *Ark Royal*.

Vice-Admiral Wells later wrote of the Swordfish raids on Vaernes that 'it is remarkable that these slow aircraft twice succeeded in attacking an enemy air base without suffering a single casualty from enemy action'.

Following the attack on 28 April, *Ark Royal* withdrew to the northwest for two days to allow the fighter crews to rest after an intense period of activity. *Glorious* was due to return to Norway, but before leaving Scapa Flow on the 30th, it disembarked three 823 NAS Swordfish and a Walrus in order to bring replacement Skuas to *Ark Royal*, plus a large complement of Sea Gladiators for fleet air defence.

On 1 May *Glorious* rejoined the carrier squadron with 12 Swordfish of 823 NAS aboard. Luftwaffe air attacks on the Royal Navy were becoming more and more intense, and at one point Ju 87 dive-bombers attempted to shoot down an anti-submarine Swordfish after they had released their bombs. The pilot successfully evaded the Stukas by making a steep climbing turn, although the Swordfish was hit twice.

The carriers' crews were worn out by now and the aircraft suffering from attrition, so Wells signalled that he intended to withdraw to the northwest – just before orders to attack Trondheim again were received from the commander-in-chief. The carrier squadron was now under almost constant bombing attack, severely hampering its efforts to make progress, and therefore the squadron was ordered to return to Scapa Flow.

The respite was short, and preparations for Operation *OB* – air support of Allied operations in Narvik – began on 4 May. That day, *Ark Royal* landed on replacement aircraft from Hatston, on Orkney, including six Swordfish. It arrived off Vestfjorden two days later. That evening, patrolling Skuas reported a submarine, so three Swordfish were flown off, but no trace of it was found. From the following day, a constant patrol by two Swordfish was established during daylight hours, one flying 15 miles

ahead of the squadron and the other 15 miles astern. This was intended to provide both an anti-submarine patrol and early warning of air or surface attack. Other operations by Swordfish included photographic reconnaissance for enemy aircraft landing supplies and shipping in the fjords. The Swordfish floatplane assigned to the battleship HMS *Resolution* was unserviceable so *Ark Royal* rigged one of its aircraft on floats as a replacement.

During the morning of 9 May, nine Swordfish of 810 NAS flew off to bomb the railway snaking east along the edge of Rombaken, a spur of Ofotfjord to the east of Narvik. This was the first of several such operations aimed at hampering supplies to the besieged German forces. Targets included Norddalsbrua (Norddal Bridge) and stations at Hundallen and Sildvik. The bridge was built from girders constructed in Germany, and was permanently rigged with explosives in case of invasion. Indeed, Norwegian forces attempted to blow it up in April, but German engineers easily repaired the damage. Three of the nine Swordfish developed engine trouble and turned back, one of them having to force-land in the sea. One of the two sub-flights that continued bombed the bridge, claiming hits on the structure itself and the mouth of the adjacent tunnel, while the other bombed trains and sidings at Hundallen station.

On the 12th, the landing of the Scots Guards was covered by Skuas, with a single Swordfish overhead for reconnaissance. Lord Cork (Admiral W H D Boyle), who was in charge of the operation, was by now sending a flurry of signals demanding various targets be bombed, but many of these requests could not be met due to the weather. Indeed, for lengthy stretches no flying was possible at all.

Several Swordfish went on armed reconnaissance when the weather improved on 13 May, their crews being tasked with scouting ahead of the army and bombing any enemy forces resisting the advance. Low cloud and fog hampered these efforts severely and the Swordfish achieved little. A flight of four 820 NAS aircraft attacked the railway again, and although a salvo of bombs hit the line at Sildvik, thick cloud made the intended attack on Hundallen impossible and the Swordfish were forced to make individual strikes on anything they could see. By the time they returned to *Ark Royal*, the ship itself was obscured by fog, and two Swordfish had to force-land ashore. Two more Swordfish, from 810 NAS, also had to land ashore after encountering bad weather – one was searching for a submarine reported off Dyrøy and the other was performing reconnaissance of high ground east of Bjerkvik.

On the 15th, 810 NAS was again sent to bomb the railway, this time at Bjørnfjell, east of the previous attacks. The Swordfish were armed with two 250-lb SAP bombs and eight 20-lb Cooper bombs, and they attacked in two sub-flights. The

702 NAS's floatplane P4199 E8F, attached to the battleship *Resolution*, being craned aboard *Ark Royal* in October 1939. This aircraft was damaged by enemy bombing during the Norwegian campaign of April–June 1940 (*Author's Collection*)

first flew to the Swedish border and approached Bjørnfjell from the east, bombing large numbers of trucks. The second sub-flight attacked the entrance to a tunnel.

That evening, *Ark Royal*'s Swordfish made a rare attack with torpedoes, although the target was not an enemy warship but the Allied troopship *Chrobry*. This vessel had been seriously damaged by Luftwaffe aircraft and left burning and adrift in Vestfjorden, where it posed a danger to shipping. The three Swordfish were armed with torpedoes fitted with magnetic Duplex pistols. One exploded under the stern, one missed and one exploded short. This would become a recognised problem with the Duplex pistol, although at the time it was misdiagnosed as a fault with the torpedo's range setting. *Chrobry* remained afloat. It was sunk the following morning by Skuas.

During the evening of 15 May Lord Cork ordered an attack on Hemnes, some distance to the south, in the belief that enemy troops and stores were concentrated there. This involved *Ark Royal* leaving its station off Narvik and the suspension of fighter patrols. On the morning of the 16th, nine Swordfish (each armed with two 250-lb bombs and eight Cooper bombs) flew off, but on their arrival at Hemnes there were no soldiers or any evidence of supplies. The Swordfish bombed jetties and storehouses instead. There was no opposition from aircraft or ground forces. *Ark Royal* returned to Narvik in the afternoon, and at the end of the day's flying, took up position to cover three Royal Navy cruisers bringing troop reinforcements to Bodø.

Ark Royal's Swordfish flew to Bardufoss, northeast of Narvik, on 17 May to photograph an emergency landing ground there. *Glorious* and *Furious* were on their way with more RAF fighters which it was hoped could operate from Bardufoss – virtually all the fighter support until this point had been provided by Fleet Air Arm Skuas – and on the 18th, the photographs were flown to the newly arrived carriers to help with their preparations. Both carriers had disembarked most of their Swordfish to create space for the RAF fighters, but each carried half a squadron (818 NAS aboard *Furious* and 823 NAS aboard *Glorious*) for anti-submarine duties. The other half of 823 NAS, using newly available long-range fuel tanks to allow them to fly from Hatston to Stavanger, carried out Operation *Bottle* – the minelaying of the harbour on the night of 17–18 May.

Groundcrew pushing a Mk XII torpedo on a wheeled dolley approach a Fairey-built Swordfish Mk I in pre-war colours at RNAS Lee-on-Solent, in Hampshire (*Author's Collection*)

The following day, Swordfish were detailed to make another attack on the railway, but the weather prevented it. The raid was carried out on 20 May instead, with the aircraft involved being armed with the last 12 of *Ark Royal*'s 250-lb GP bombs. This precious ordnance was subsequently jettisoned uselessly into the sea as visibility inland from the coast was non-existent thanks to a weather front.

The attempts to fly the fighters – a squadron of Gladiators from *Furious* and a squadron of Hurricanes from *Glorious* – were hampered by the weather too, and on 21 May one of 818 NAS's Swordfish was lost attempting to escort the Gladiators. However, by 1230 hrs that day all the fighters had been despatched and the carriers were ordered home.

Soon afterwards, however, the German assault on Belgium, France and the Netherlands (launched on 10 May) had brought the Allies to the brink of defeat. On 24 May the evacuation of French and British forces in Narvik was authorised. *Ark Royal*'s role would now be to cover the evacuation, while *Glorious* provided fleet defence with its Sea Gladiators, with a few Swordfish aboard purely for self-defence. The latter effectively meant anti-submarine patrols only, although the Swordfish were capable of attacking surface vessels if required.

As such, 823 NAS was not prepared for operations over Norway and, according to the RN's official historian Stephen Roskill, had no maps or information about the terrain. On 27 May Lord Cork, who had made obsessive requests for aerial attacks on enemy communications during the previous period of operations, instructed *Glorious*' Swordfish to attack 'Anything they can find – roads, aerodromes or anything else'. This led to a dispute between the senior air officers of the ship, who pointed out the flaws in the request, and its commanding officer, Capt G D'Oyly-Hughes, who was determined to carry out the Commander-in-Chief's request. D'Oyly-Hughes clashed with his Commander Air, Cdr J B Heath, about this, and numerous other things, and the latter was put ashore pending a court martial when *Glorious* returned to Scapa Flow to refuel on 30 May, before heading back to Narvik.

Glorious, with the Sea Gladiators of 802 NAS and half of 823 NAS's Swordfish embarked, prepared to recover the RAF aircraft transferred to Bardufoss just a few days before, while again, *Ark Royal* provided air cover to the evacuation. Swordfish would play a part in this operation by shepherding the fighters from Bardufoss to the carrier.

Poor weather prevented much flying from taking place, but it also kept the Luftwaffe at bay. Despite no deck-landing training or arrester gear, the RAF Gladiator and Hurricane pilots managed to land back aboard *Glorious*. The evacuation was successful, mostly implemented before German forces were aware. While *Ark Royal* remained in the vicinity of the troopship convoys to provide protection from air attack, *Glorious* detached on the morning of 8 June to return home directly. This marked the end of the Norwegian campaign itself, although the effects of its last days echoed for months.

On realising the evacuation was underway, the Kriegsmarine belatedly began hunting for troopship convoys, but only managed to sink a few empty merchantmen. The battlecruisers *Scharnhorst* and *Gneisenau* under Admiral Wilhelm Marschall were already at sea making their way to bombard Harstad. The squadron encountered *Glorious* sailing to Scapa Flow with only two escorting destroyers. For reasons that have never been fully explained, it had not flown off any aircraft, nor were any aircraft ready to fly, and only anti-submarine bombs were available for immediate use.

The crew hurriedly attempted to prepare 823 NAS's Swordfish for launch. Two or three machines had been brought on deck when a lucky

shot by *Scharnhorst*'s 28 cm guns at 24,000 m struck the flightdeck forward. This destroyed the ranged Swordfish and detonated among the aircraft struck down below, spilling burning aviation fuel throughout the hangar and ending any attempts to launch an aircraft. The two destroyers, HMS *Ardent* and HMS *Acasta*, fought bravely but could only delay the inevitable – less than two hours after fire was first opened, all three of the Royal Navy ships were gone. However, *Acasta* managed to torpedo *Scharnhorst* before it was sunk, forcing the battlecruiser to put in to Trondheim.

The Admiralty was determined to take advantage of the heavy warships being within range of carrier aircraft. The First Sea Lord, Admiral Sir Dudley Pound, told the War Cabinet that 'the Naval Staff felt that it would be worthwhile running considerable risks to put the two warships out of action for good. One of them was believed to be a battlecruiser. If these ships could be dealt with now, it would save us a great expenditure of effort later on, and probably much loss of life and shipping'. Pound added that the Commander-in-Chief Home Fleet, Admiral Sir Charles Forbes, proposed to send *Ark Royal* back to Norway as soon as the convoys from Narvik were safely delivered to make an attack with 21 Swordfish escorted by 22 Skuas.

There were many problems with this plan. The north of Norway was by this time of the year in constant daylight and it would be difficult to approach Trondheim undetected, while the airfield at Vaernes was now occupied by German fighters. The War Cabinet refused to approve the operation, and on 10 June urged the Admiralty to come up with other ways of attacking the warships in Trondheim instead. The Admiralty was determined to take its opportunity, however. RAF Coastal Command was due to bomb the ships at anchor on 11 June, and Pound brought the plan back to the War Cabinet. Chief of the Air Staff, Air Marshal Sir Cyril Newall, repeated his concern that Swordfish would be too vulnerable, so Pound suggested sending only Skuas to dive bomb the ships.

The War Cabinet tentatively agreed, although Forbes was told to exercise his discretion. The following day, Pound once again pushed to send Swordfish – the War Cabinet allowed this if 'conditions were favourable'. Swordfish armed with torpedoes were the only Royal Navy carrier aircraft capable of doing serious damage to *Scharnhorst* – the largest ordnance carried by the Skua was the 500-lb SAP bomb. However, only Skuas were sent, and of the 15 despatched just seven returned, among the aircrew lost being two squadron commanders. Swordfish losses would doubtless have been higher still.

By 20 June, *Scharnhorst* had completed temporary repairs sufficient to allow it to return to Germany. Despite regular RAF reconnaissance, the departure of the battlecruiser and its escort of destroyers, torpedo boats and minesweepers went undetected until midday on the 21st when an RAF Coastal Command Lockheed Hudson reported the ships off Sognefjorden.

At Hatston, Swordfish from 821 NAS, *Ark Royal* and the surviving half of *Glorious*' 823 NAS were despatched with torpedoes. Although the range was extreme, the Admiralty remained determined to take any opportunity to sink *Scharnhorst*. Three aircraft from each squadron reached the Kriegsmarine squadron off Utsire just after 1600 hrs. This

was a golden opportunity to inflict a telling blow on German naval power, but the crews were inexperienced and undertrained due to the severe operational pressures that the FAA had been under in recent months. All aircraft attacked from the same side, on a parallel course, so *Scharnhorst* was able to dodge the torpedoes, while the warships' anti-aircraft defences shot down two of the 823 NAS Swordfish, killing all four crewmen.

On a more positive note for the Swordfish, four days after the disappointing attack on *Scharnhorst* and its escorts, Royal Marines Capt N R M Skene of 810 NAS (who was flying the anti-submarine Swordfish attacked by Ju 87s on 1 May) and Capt A R Burch, commanding officer of 816 NAS, received the Distinguished Service Order (DSO) for actions over Norway.

DUNKIRK AND THE CHANNEL

Several Swordfish squadrons spent part of the early war ashore. The loss of *Courageous* on 17 September 1939 meant that for a time there were more squadrons than could be accommodated aboard carriers. This was exacerbated during the Norwegian campaign when Swordfish units were reduced in size or disembarked altogether to make more room for fighters and dive-bombers. Finally, several squadrons were seconded to RAF Coastal Command to help with the rescue of the British Expeditionary Force (BEF) from France and to stave off the threat of invasion.

When *Ark Royal* and *Glorious* sailed for Norway in late April 1940, the former disembarked 821 NAS and the latter 812 NAS. *Ark Royal*'s Swordfish unit remained at Hatston, patrolling in search of enemy vessels, and it was later joined by half of *Glorious*' 823 NAS. Meanwhile, 812 NAS headed south for convoy patrol and minelaying around the south and east coasts under RAF command, where it was joined by the newly operational 815 NAS.

On 9 April – the day German forces invaded Norway and Denmark – there were fears of an assault by the Kriegsmarine on the south coast of England, and 815 NAS at Bircham Newton, in Norfolk, was ordered to stand by 'with torpedoes from 1200 [hrs] to take-off if the German Fleet happened to stray in this direction'. This was followed by intensive periods of training in night flying and torpedo attack. On 21 April, the squadron collected 'cucumbers' – air-laid magnetic mines – from North Coates, in Lincolnshire, and that night began operational minelaying sorties.

From 10 May, after the launching of the *Blitzkrieg* on France, Belgium and the Netherlands, more FAA Swordfish squadrons were temporarily detached to the Channel area to assist the ever-more-stretched RAF. 816 and 818 NASs from *Furious* spent time operating in the south while their parent carrier underwent repairs. With *Glorious* transporting RAF fighters to Norway and prioritising FAA fighters for air defence, its third Swordfish squadron, 825 NAS, also disembarked for service with RAF Coastal Command in May.

That month, 812 NAS was operating from North Coates, minelaying around the Dutch and Belgian coast and bombing coastal targets such as oil tanks and assemblages of invasion barges. Aircraft were fitted with

Two early Swordfish Mk Is provide the backdrop for a pair of Mk XII torpedoes being wheeled in the direction of other aircraft out of shot at a Royal Navy shore station in 1940–41. The nearest aircraft, L2729, was engaged in torpedo training for most of its career at Gosport, on the Hampshire coast, throughout 1939–40, and latterly at Crail and Donibristle in Scotland. Many operational Swordfish squadrons also operated from shore stations across Britain during this period, often under RAF operational control (*Author's Collection*)

long-range cockpit tanks to allow them to fly further, and therefore carried only two crewmen. One Swordfish was lost on operations.

On the night of 12 May, eight Swordfish from 815 NAS were sent from Bircham Newton to bomb the airfield at Waalhaven, near Rotterdam, in concert with Bristol Beauforts of No 22 Sqn. Despite the lack of anti-aircraft fire, one aircraft had to force-land on the island of Overflakkee. Lts A S Downes and R W Little evaded via Antwerp and made it home two days later. Shortly after that the unit prepared for a return to FAA service, but this was abruptly reversed on the 20th when RAF Coastal Command requested the services of another TSR squadron.

Unbeknownst to the Swordfish units, the British government had decided to evacuate the BEF, which was now trapped in an area of the northern coastline, and every effort was to be made to defend the withdrawal, codenamed Operation *Dynamo*. On 22 May, Swordfish hurriedly trained in co-operation with RAF Spitfires.

Astonishingly, six experienced pilots and observers, all lieutenants, were posted out of 815 NAS on 24 May, replaced by green sub-lieutenants and midshipmen. That same day, 825 NAS was sent to attack German forces near Calais. One aircraft was shot down and both crewmen were killed. Two days later, a Swordfish crew from the same squadron was performing gunnery spotting for the cruiser HMS *Galatea* off Calais. The shoot was going well – two field guns had been destroyed – when the Swordfish was attacked by two Bf 109s, and the pilot, Sub-Lt J B Kiddle, began to manoeuvre the aircraft violently in an effort to evade the attackers. Whether the Observer, Lt G N Beaumont, was not secured properly or the manoeuvres broke his securing 'G-string', he was flung out of the Swordfish at 8000 ft and fell to his death. The aircraft escaped and the pilot and gunner survived.

825 NAS was hit particularly badly by its activities over the Channel. Eight of its 12 aircraft were lost (including the Swordfish flown by unit CO Lt Cdr J B Buckley), most of them over the night of 28–29 May

when the squadron flew a bombing raid on German forces near Dunkirk from Worthy Down, in Hampshire. On 29 May, 815 NAS despatched two sub-flights to attack transport ships in Texel harbour, but low cloud rendered accurate bombing impossible. Eight aircraft returned to Texel on the 31st, half dropping 'B bombs' – a special type of ordnance designed to sink under a ship, then rise and detonate beneath the keel – in the harbour approaches. The other half of the squadron was armed with standard 250-lb bombs and incendiaries to attack the AA defences and ships at anchor. 815 NAS was withdrawn from RAF Coastal Command shortly afterwards for the new carrier HMS *Illustrious*, which would soon begin working up to join the Mediterranean Fleet.

Italy declared war on the Allies on 10 June and France surrendered on the 22nd. The threat of an invasion of Britain increased. Operations to mine harbours, attack shipping and destroy barges before they could be used for a Channel crossing increased in intensity.

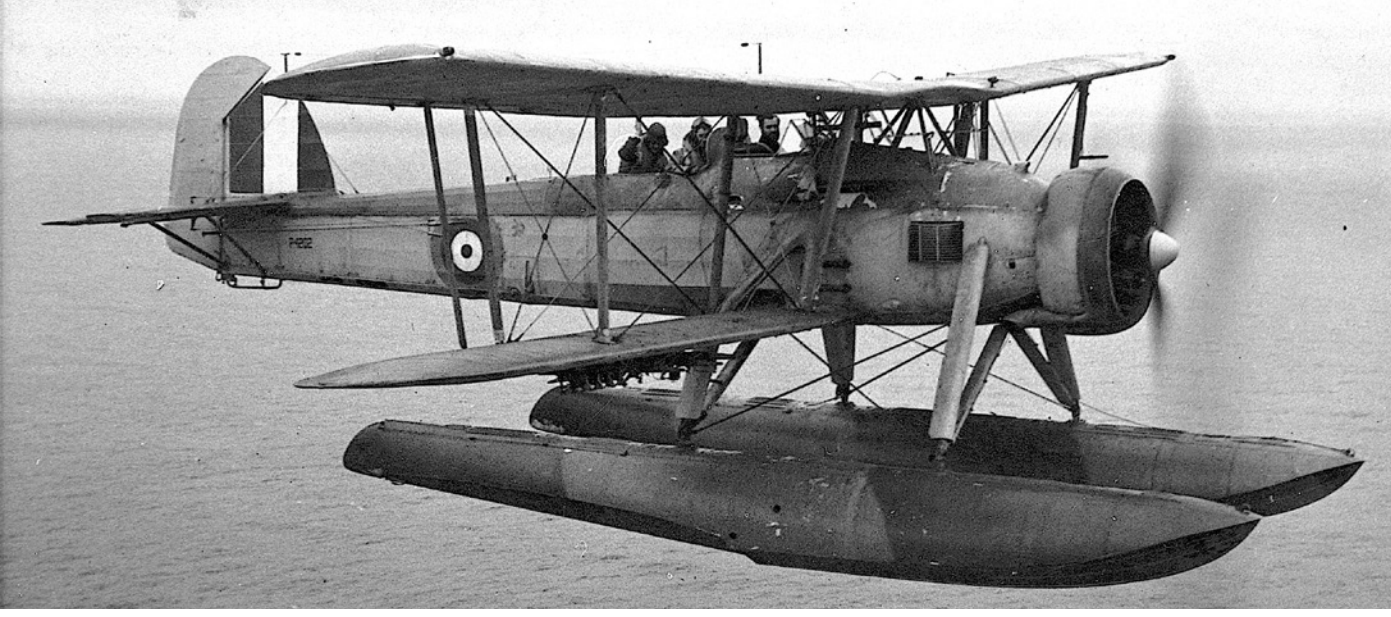
In July, 812 and 825 NASs were repeatedly employed attacking shipping and barges in Dutch ports. These operations were risky for Swordfish, and even during nocturnal missions they were vulnerable to anti-aircraft fire because of their slow speeds. On the night of 1–2 July, Swordfish and Albacores from several squadrons were sent to bomb barges around Rotterdam. The formations were broken up by cloud, and not all aircraft found the target. Another of 825 NAS's Swordfish was lost when hit by anti-aircraft fire – pilot Sub-Lt B P Grigson and Observer/Air Gunner Sub-Lt F L Lees attempted to bail out too low and were killed.

As the immediate threat of invasion receded, new carriers became available – *Illustrious* began working up in June, while its sister-ship HMS *Formidable* commissioned in November – and others returned from repair. After 825 NAS joined *Ark Royal* in July, 812 NAS was the only remaining FAA Swordfish squadron still on the south coast under RAF authority.

Several of 812 NAS's crews were lost in August. Lt N M Hearle and his Observer, Sub-Lt R L G Davies, became PoWs after they were shot down attacking Daedereide on the 22nd. Nine days later, Lt G Villiers was killed and his Observer, Sub-Lt M V Driver, captured after they were downed while bombing the oil storage tanks at Vlaardingen. In September, an attack was made on German ships laying mines in Falmouth Bay – one of these was the destroyer Z16 *Friedrich Eckoldt*, which had escaped an attack by *Furious*' Swordfish back in April. On this occasion it received light damage from bomb splinters.

812 NAS remained on the south coast until March 1941, continuing minelaying and bombing operations until returning to FAA control to provide anti-submarine cover to an operation flying Hurricane fighters to Malta, known in the Royal Navy as a 'Club Run'.

The Swordfish was generally ill-suited to operations over Norway, the English Channel and the French, Belgian and Dutch coasts in the spring and summer of 1940. As a result, the FAA suffered heavy losses among its well-trained pre-war aircrews, while new replacements were thrown into the fray without the opportunity to develop their skills. After a disastrous April–August 1940, the FAA's Swordfish squadrons would have to rebuild and re-learn.



CHAPTER TWO

OLD ALLIES, NEW ADVERSARIES

Swordfish Mk I P4202 was assigned to 700 NAS, the FAA's pool unit for capital ship catapult aircraft, and operated from the battlecruiser HMS *Repulse* between November 1940 and February 1941. Swordfish floatplanes like this one were used extensively for gunnery spotting and reconnaissance, notably during the actions against Vichy French warships in July 1940, and they could also be operated directly from carrier decks when required (*Author's Collection*)

The Mediterranean became a full theatre of war on 10 June 1940 when Italy declared war on France and Britain. FAA Swordfish assets in the region consisted of 767 NAS only, this second-line unit taking advantage of the favourable weather to carry out deck-landing training with the aircraft aboard the veteran carrier HMS *Argus*, operating from Hyères la Palvystre, in France, when not embarked.

Although technically a training squadron, 767 NAS actually had a number of operational aircrew who had survived the sinking of *Courageous*. This meant that when the Mediterranean became a war zone, the unit was eminently capable of striking the first blow for the FAA. The squadron duly became operational on 10 June, and three days later nine of its Swordfish took part in an air raid on Genoa, using French bombs and acting in concert with *Armée de l'Air* bombers. France was already on the verge of collapse, however, and 767 NAS's 18 Swordfish left Hyères la Palvystre for Bône, in Algeria, on 18 June.

Two-thirds of the squadron, with 12 aircraft, continued to function as an operational unit (designated 830 NAS from 1 July) and transferred to Malta. The remaining third of 767 NAS – aircrews that had not completed their training – returned to Britain aboard *Ark Royal*, with the unit's six aircraft being retained by the carrier's squadrons as spares. *Ark Royal* was soon to become the lynchpin of Force H, a new naval group based at Gibraltar under Vice-Admiral Sir J F Somerville that was to serve as a 'counterweight' to the

Regia Marina, given the removal of the *Marine Nationale* from the Allied 'scale'.

By this time, Britain's relationship with France had changed beyond all recognition. Close allies in combat just days before, they now eyed each other with suspicion. The *Marine Nationale* survived the Battle of France virtually intact, and many of its warships, powerful and modern, found refuge in France's overseas colonies, chiefly North Africa. In the Mediterranean, French warships were concentrated in ports on the North African coast at Alexandria, Algiers, Oran and the adjacent Mers El Kébir. There were also several cruisers and the battleship *Richelieu* at Dakar, on the Atlantic coast, where the carrier *Hermes* had been based until the French surrender. The incomplete battleship *Jean Bart* was at Casablanca, in French Morocco.

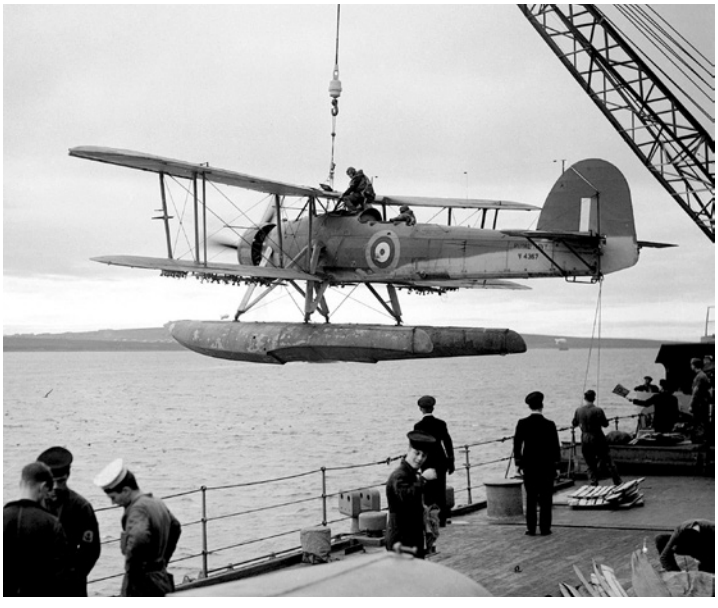
Much-patched 767 NAS Swordfish Mk I T4W flies in formation with another aircraft from the unit in the summer of 1940. This photograph was taken sometime after the squadron had split to allow the formation of 830 NAS (an operational unit), which stayed in the Mediterranean, while 767 NAS's remaining aircraft and crews returned to England to continue training personnel destined to fly the Swordfish in the frontline. The serial of this particular aircraft is unknown (*David McNaught Collection*)

Thus, the warships were technically still under the control of the post-armistice French government in the unoccupied zones of the country and its empire under the terms of its surrender. The British government feared these ships falling into German hands, adding dramatically to Axis naval strength and shifting the balance of power at sea. It argued for French warships to join the forces still fighting Germany, or to disarm under Allied or neutral control. The French, on the other hand, believed that the British Empire would soon be defeated and were determined to retain their navy as a bargaining chip in negotiations with Germany. In early July the British presented France with an ultimatum – hand over or disarm the warships, or they would be disarmed by force.

Operation *Catapult* was initiated on 3 July to neutralise the French warships. In the Egyptian port of Alexandria, home of the Royal Navy's Mediterranean Fleet, the *Marine Nationale* crews agreed to disarm their vessels following negotiation. No such agreement was reached in French-controlled ports, although Force H essentially blockaded Oran and nearby Mers El Kébir in French Algeria.

Ark Royal's air group included Swordfish-equipped 810, 818 and 820 NASs. The carrier and its aircraft would be extremely busy during the day of the operation, being tasked with anti-submarine cover, reconnaissance, gunnery spotting and strike. FAA carrier-based units were routinely overwhelmed like this during the first part of the war when often only a single carrier was available in each zone of operations.

Regular patrols by Swordfish began before daybreak, while larger groups of aircraft were despatched from dawn to reconnoitre towards the Spanish coast. An hour later, a single Swordfish was sent to reconnoitre the harbours. Reconnaissance flights and anti-submarine patrols were maintained all day, while preparations were made to lay mines in the harbour entrance



700 NAS floatplane Swordfish Mk I V4367 is craned aboard the Queen Elizabeth-class battleship *Malaya* in October 1941 during exercises off Orkney following the vessel's refit. Before the ship departed for the Mediterranean at the end of the month, the Swordfish had been replaced with the Walrus (*Author's Collection*)

The view from Oran of the *Marine Nationale* anchorage at Mers El Kébir under bombardment by vessels of the Royal Navy's Force H on 3 July 1940. Columns of smoke from burning warships are clearly visible (*Author's Collection*)

if the French warships appeared to be preparing to sail. At midday, the Swordfish over the harbour reported that vessels were raising steam, so the minelaying force was readied and flown off at 1345 hrs.

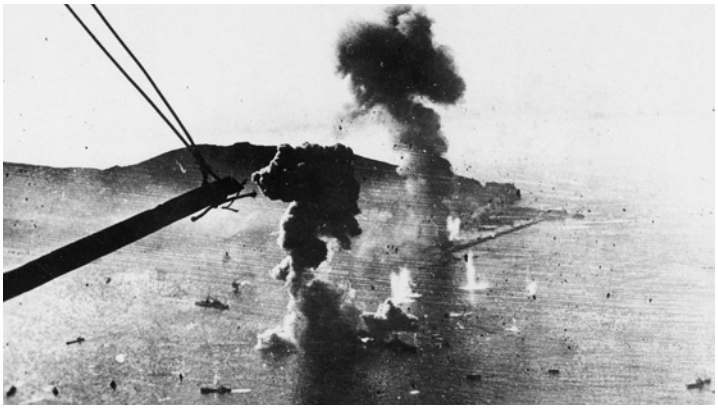
Somerville gave the French commander, Admiral Marcel-Bruno Gensoul, until 1500 hrs to make a final decision, but it was already clear he would not submit. A further Swordfish armed with mines was flown off 30 minutes after the ultimatum to mine Oran, and three more Swordfish launched to help spot the fall of shot for the battleships, but the attack was delayed until 1757 hrs. During this period, several aircraft began to run low on fuel, including numerous Swordfish, three of which were 700 NAS floatplane aircraft from the battleships. As action was imminent, and it would not be possible for the battleships to recover their aircraft, they landed on *Ark Royal* instead. Landing of non-amphibious floatplanes on aircraft carriers was a relatively standard practice after trials in 1927 proved it practicable.

The episode did, however, demonstrate the impracticality of the Swordfish as a catapult aircraft compared with the amphibious Walrus, which could land on carriers routinely and had numerous other advantages. The Admiralty noted that there were 'a limited number of conversion sets', for the Swordfish floatplane, and 'no more have been ordered' as 'the Swordfish is unsatisfactory as a floatplane, especially at full load'. Most seriously, recovering all the aircraft during this phase delayed the planned air strike and reduced the number of aircraft that could contribute to it.

With the bombardment beginning at 1757 hrs, Swordfish from *Ark Royal* and floatplanes from the battleships were expected to provide reconnaissance and help guide the bombardment. In this they were effective. The second salvo struck the modernised 1915 battleship *Bretagne*, with catastrophic results, and it sank within minutes. The modern battlecruiser *Dunkerque* was hit repeatedly as it attempted to get underway and the vessel was beached on the far side of the anchorage.

As the bombardment progressed, *Provence*, sister-ship of *Bretagne*, managed to leave its mooring but was hit as the battleship moved

across the harbour. It too had to be beached. The second *Dunkerque*-class battlecruiser *Strasbourg* made it to the harbour entrance – a move which did not go unreported by the reconnaissance Swordfish, despite the thick smoke hanging over the harbour. Somerville was slow to respond, however, as at this moment the French admiral in the port appeared to be ready to surrender.



The bombardment of Mers El Kébir seen from a French *Aéronavale* Bréguet 521 Bizerte flying boat. In the centre just to the right of the large column of smoke can be seen the battlecruiser *Strasbourg* escaping. It was later attacked unsuccessfully by Swordfish from *Ark Royal* (*Author's Collection*)

Just under 30 minutes after the bombardment began, *Ark Royal* launched six Swordfish of 818 NAS armed with 250-lb bombs to join the attack on ships in the harbour. By this time it was apparent that *Strasbourg* was escaping, so the strike force was directed to attack it instead. The Swordfish made a good attack down-sun from 11,000 ft but scored no hits.

In fact, the battlecruiser was likely to pass well within gun range of *Ark Royal*, compelling the carrier to withdraw at high speed for 25 minutes. When *Ark Royal* had reached a safe distance, Somerville ordered a torpedo strike on *Strasbourg*, which was now being shadowed by one of the Swordfish already in the air. At 1950 hrs, six Swordfish were flown off armed with torpedoes each fitted with a magnetic Duplex fuse and set for 20 ft depth. They worked round to the starboard bow, between the land and the ship, which was silhouetted against the last glow of the sun. As with the dive-bombing attack, no hits were scored – the approach was good and the attack well executed, and an explosion was seen under the stern, but in fact no hits were made. Six aircraft was too few to guarantee a hit against a fast-moving target with freedom of manoeuvre.

Ark Royal had been rather overburdened with tasks during the day, and it was unsurprising that the carrier's aircraft had not managed to make the most of the opportunities presented to them. There is a possibility that the explosion seen was a torpedo detonating prematurely due to its Duplex pistol misfiring. Although there was evidence of the pistol's sensitivity and liability to detonate early or not at all at this time, the problems were not identified until the *Bismarck* action in May of the following year. *Strasbourg* escaped to Toulon after Somerville gave up the pursuit.

Ark Royal was ordered to fly off a strike against *Dunkerque* the following morning before dawn, as it was believed the battlecruiser was not badly damaged. This was postponed due to fog and took place on the 8th, with 12 Swordfish flying in three waves. The French had attempted to give the impression that *Dunkerque* had been abandoned, so its anti-aircraft guns were not manned. The captain ordered the magazines flooded as soon as the Swordfish approached.

Several patrol vessels were moored alongside the battlecruiser to take the crew off, and these had been loaded with depth charges taken off damaged warships. One of the first torpedoes sank the patrol boat *Terre-Neuve* and another torpedo from the second wave of Swordfish detonated the depth charges it was carrying. The large explosion caused extensive damage to

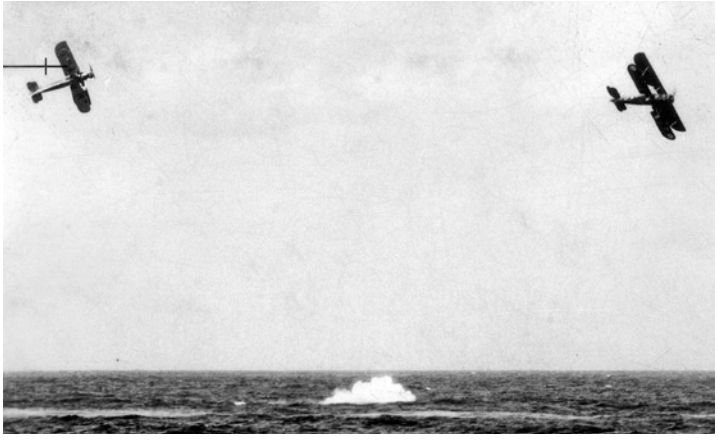
A single Swordfish of 814 NAS spotted on *Hermes*' flightdeck in 1940. Six aircraft from this unit successfully targeted the French battleship *Richelieu* at anchor in the port of Dakar on 9 July 1940 (*Author's Collection*)

Dunkerque – it would be years before the battlecruiser was fit to return to France, and repairs were never completed.

The same day (8 July), a force of warships including *Hermes* approached Dakar, where the battleship *Richelieu* had sought refuge. *Richelieu*, which had not finished fitting out but was close to completion, was one of the most powerful and modern battleships in the world. An ultimatum was given to the French admiral in command of naval forces in Dakar, who not only refused to disarm but threatened to fire on the Royal Navy vessels.

During the night a motor boat from *Hermes* sneaked into the port and dropped depth charges under *Richelieu*'s stern. These were supposed to detonate at 0245 hrs but failed to go off. Six Swordfish of 814 NAS flew off at 0500 hrs and attacked *Richelieu* at the battleship's mooring. It was still dark and the anti-aircraft fire was heavy, so while the crews all thought that their torpedoes had been aimed well and run straight, they had seen no sign that any hits had been made. It was something of a surprise, therefore, when reconnaissance after first light revealed the battleship down by the stern, listing and surrounded by a huge patch of oil. In fact, one torpedo had struck the battleship at the stern and done considerable damage, possibly exacerbated by the depth charges.

Swordfish from *Ark Royal* practise a torpedo attack in 1940–41. A Mk XII torpedo dropped at the wrong height or attitude, or while the aircraft was yawing, could run incorrectly or break up upon hitting the water (*Author's Collection*)



The attacks on French warships were controversial at the time, and the Royal Navy personnel involved did not relish their task. It turned France substantially against Britain and marginalised the Free French forces, although it may have persuaded other nations, not least the USA, of Britain's determination

to fight on when many were convinced that either defeat or settlement were imminent. Regardless of whether the operations were beneficial or harmful to the Allied cause, the FAA's Swordfish had finally proved their great potential against powerful warships.

Unfortunately, the FAA's business with the ostensibly neutral French was not over. In September, a force made up of the Royal Navy, including *Ark Royal*, and Free French military sailed for Dakar in Operation *Menace* – an effort to bring French North Africa over to the Allies. Free French leader Gen Charles de Gaulle believed he could persuade the authorities in Dakar to switch from the Vichy government. The planned operation involved dropping leaflets over Dakar and flying Free French officers into the airport to negotiate with the authorities. If diplomacy failed, troops of the Royal Marines and French Foreign Legion were to be landed to take the city.

Gen de Gaulle misjudged the attitude of Dakar's commanders, and the operation began to go wrong as soon as the Allied force arrived on 23 September. A Swordfish landed Free French officers who were immediately detained, and the aircraft was attacked by Curtiss Hawk H-75 fighters on its return to *Ark Royal*. Gunfire was exchanged between the ships and shore batteries and Swordfish were attacked while carrying out observation flights. The following day, six Swordfish from 820 NAS were flown off to bomb the batteries, while six more from 810 NAS went to attack the damaged *Richelieu* – one of them was shot down by the battleship's anti-aircraft defences. Another 820 NAS task was dive-bombing destroyers in the harbour.

The usual requirements for reconnaissance, anti-submarine patrol and gunnery spotting also had to be covered, all with aircraft at risk of attack by French fighters. Three of the patrolling Swordfish were indeed intercepted, some of them repeatedly, and several were shot down by fighters during the strikes. The operation was a comprehensive failure. If there was a tiny consolation for the Swordfish squadrons, it was that future First Sea Lord Vice-Admiral J H D Cunningham, commanding the 1st Cruiser Squadron, noted that 'during Operation *Menace Ark Royal* supplied invaluable reconnaissance information', adding that 'Striking Forces attacked the objectives in the manner and with the spirit expected of the Fleet Air Arm'.

For the next two years, the Royal Navy would fight a pseudo-war with French forces. The two countries were technically not at war, but clashed on occasion in the Mediterranean, Middle East and Indian Ocean, and FAA Swordfish were involved in several such engagements until French forces in North Africa joined the Allies in November 1942.

Swordfish Mk I P4217 is examined by Vichy French military personnel after the aircraft was shot down by anti-aircraft fire from the damaged battleship *Richelieu* when the vessel was attacked in Dakar on 24 September 1940. Although assigned to 814 NAS, P4217 was one of a handful of Swordfish loaned to 810 NAS embarked in *Ark Royal* for the unsuccessful Operation *Menace*. Pilot Lt H H Jackson, Observer Lt J S L Crabbe and Gunner NA 1st Class N Jarvis all became PoWs (*Andy Saunders Collection*)

CHAPTER THREE

EASTERN MEDITERRANEAN

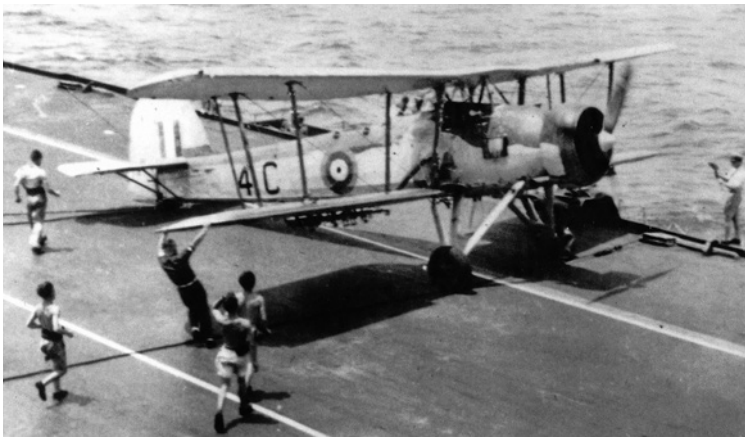
Armed with torpedoes, Swordfish 5A and 5K (K8418) of 824 NAS, embarked in *Eagle*, undertake an operational flight over the eastern Mediterranean in the early summer of 1940. K8418 has coloured horizontal stripes on its fin, denoting its assignment to a flight leader (*Author's Collection*)

The outbreak of war in the Mediterranean in June 1940 was not entirely unexpected. Tensions between Italy, Britain and France had risen dramatically since Prime Minister Benito Mussolini's invasion of Ethiopia in 1935. Reluctantly, the Royal Navy began preparing for war with Italy, aware that with the need to rearm at home and in the Far East, it would be difficult to retain parity with the *Regia Marina*.

The nature of the Mediterranean provided the Allies with both significant advantages and difficult challenges. Sea access was restricted to the Strait of Gibraltar in the west and the Suez Canal in the east, both effectively controlled by the Royal Navy. On the other hand, the Allied navies had to operate within range of Axis land-based aircraft for a lot of the time. Indeed, Malta (the Royal Navy's main anchorage in the central Mediterranean) was so vulnerable to air attack that many in the Admiralty considered that there was little chance of retaining its capability as an offensive base.

The particular geography of the Mediterranean, with Italy cutting across the centre, also affected a naval war against it. The main route of access between the eastern and western Mediterranean was the Sicilian Narrows, just 90 miles across, with the Italian island of Pantelleria in the middle. This divided the sea into two separate zones for the Allies, while the *Regia Marina* had easy access to both sides. In addition, Italian aircraft could operate from Libya, which divided British-allied Egypt from the French colonies of Algeria, Tunisia and Morocco.

In the late 1930s, the British and French governments came to an agreement that in the case of war with Italy, the *Marine Nationale*, with its bases in North Africa, would take the lead in the western Mediterranean, while the Royal Navy, operating from Alexandria, would focus on the eastern zone. This plan was shattered when France signed an armistice with Germany on 22 June 1940, and with Italy two days later. If the Royal Navy was to fight Italy, it would have to cover both halves of the Mediterranean, with little opportunity to concentrate forces in order to deliver a knockout blow.



Having just landed back aboard *Eagle* during routine operations in 1940, Swordfish 4C of 813 NAS prepares to be pushed back to free its tailhook from the arrestor wire. Once clear of the latter, the aircraft would be taxied forward towards the carrier's bow and spotted (*Author's Collection*)

The major disadvantage faced by the *Regia Marina* was that its shipping routes to North Africa, by which it had to supply its colonies and its army in the field, passed close to Malta, where British submarines and aircraft were based. Skirting east to avoid Malta made them vulnerable to the Mediterranean Fleet sortieing from Alexandria.

When *Glorious* was recalled from the Mediterranean to take part in the Norwegian campaign in May 1940, it left no Royal Navy carrier present in-theatre. *Eagle*, with Swordfish-equipped 813 and 824 NASs embarked, was assigned to take the place of *Glorious*. That month, it sailed from Singapore and joined the Mediterranean Fleet on 27 May, immediately taking part in exercises.

So far, *Eagle*'s Swordfish squadrons had little wartime experience, except for largely uneventful raider patrols over open ocean. When war with Italy broke out a fortnight after the carrier's arrival, the Swordfish crews found themselves in the hottest zone of warfare the FAA was engaged in. *Eagle*, being a smaller carrier, had no fighter squadron – a serious drawback in a theatre like the Mediterranean. Fortunately, *Eagle*'s Commander Flying, Cdr C L Keighly-Peach, had fighter experience, and there were spare Sea Gladiators in storage at Malta. A 'fighter flight' of three aircraft was attached to 813 NAS, the aircraft being flown by Keighly-Peach and two Swordfish pilots hurriedly trained in fighter tactics.

The situation was uncertain for the next few months, with the Italian invasion of Greece and the German invasion of Rumania adding to Allied anxiety. Italian troops advanced from Libya into Egypt in September, but made little progress. RAF aircraft in Egypt were diverted to Greece to help resist the Italian advance there.

From the outbreak of war, *Eagle* made several sweeps with the fleet towards the central Mediterranean in the hope of fighting a fleet action against the *Regia Marina*, and covered convoys from Alexandria to Malta and Piraeus, in Greece. The usual incessant anti-submarine patrols were the main activity during these sorties – Swordfish spotted several submarines during convoy MA 3 in late June, contributing to the sinking by destroyers of *Argonauta*, *Uebi Scebelli* and *Console Generale Liuzzi*.

While 813 NAS was on a brief disembarkation at Dekheila, in Alexandria, between fleet operations, an Italian convoy was detected heading for Tobruk, on the Libyan coast. A number of ships reached the harbour unharmed, but where they sat at anchor was in range of enemy aircraft flying from forward bases. The RAF had little anti-shipping capability in the Mediterranean, however, so its regional command asked the FAA to try while Bristol Blenheims of No 211 Sqn carried out a diversionary raid on Tobruk airfield.

At 1030 hrs on 5 July, nine Swordfish from 813 NAS took off from Maaten Bagush, near Mersa Matruh in Egypt, and flew west along the coast. They reached the port just over two hours later with total surprise. There was little opposition, and in less than ten minutes, they torpedoed five ships – the destroyer *Zeffiro* and the merchantman *Manzoni* were sunk outright, while the destroyer *Euro* had its bow blown off but was able to be beached. The liner *Liguria* and the merchant ship *Serenitas* also had to be beached. There were no casualties among 813 NAS, although Italian sources claim one aircraft was shot down.

Three days later the Swordfish re-embarked, whereupon *Eagle* departed to take part in Operation *MA5* – a series of activities to cover two convoys sailing from Malta to Alexandria carrying stores and evacuated personnel.

Several groups of Royal Navy warships covering *MA5* came under sustained aerial attack from Italian bombers on 8 July. In fact the opposition was so strong that Vice-Admiral Sir A B Cunningham, Commander-in-Chief, Mediterranean Fleet, deduced that the Italian military must be covering a convoy of its own. As it happened, the *Regia Marina* was running a convoy between Naples and Benghazi, in Libya, at the same time as *MA5*. Hoping that this might lead to a decisive clash with the *Regia Marina*'s battle fleet, Cunningham concentrated three main groups of warships at dawn on the 9th and sped towards Taranto, the Italian anchorage, in an attempt to cut the enemy fleet off. What followed would become known as the Battle of Calabria to the Royal Navy and Battaglia di Punta Stilo to the *Regia Marina*.

At dawn on the 7th, *Eagle*'s Swordfish began to fly patrols out to 60 miles from the fleet, covering a wide arc. Mid-morning, a patrolling Swordfish reported enemy battleships and cruisers nearby. This was the main fleet, under Squadron Admiral Inigo Campioni. He ordered his forces to concentrate after the presence of the Royal Navy was discovered, and separate groups of warships began to converge.

Nine Swordfish of 824 NAS armed with torpedoes were flown off in the first attack in history by naval strike aircraft on an enemy battle fleet at sea. However, *Eagle* had too few Swordfish to mount the attack while continuing to shadow the Italian fleet, which altered course unbeknownst to the carrier's aircrew. When 824 NAS reached the appointed location the enemy was nowhere to be seen. Lt Cdr A J Debenham, leading the squadron, searched to the west and found a group of cruisers. The Swordfish attacked the rearmost two cruisers and the leading destroyer in three sub-flights, but they failed to score any hits. Anti-aircraft fire was fairly heavy, but 'too erratic to be effective', at which the aircrews were 'agreeably surprised'. The Italian gunners claimed three Swordfish shot down, despite none sustaining more than minor damage.

In the meantime, the leading British warships came within range of the Italian fleet, which began to withdraw to the north for fear of being cut off from its base. *Warspite*'s Swordfish floatplane was in the thick of things, flown again by PO F C Rice. Possibly assisted by the Swordfish's information, *Warspite* claimed an extremely long range hit on the battleship *Giulio Cesare*. The spotter Swordfish also helped Royal Navy vessels avoid torpedoes fired by Italian destroyers. A Swordfish from *Eagle* acted as a spotter for the battleship HMS *Royal Sovereign*.

A second 824 NAS strike force armed with torpedoes was assembled and flown off in the afternoon. Just as *Warspite* broke off, Debenham took his aircraft in to attack the leading ships which he took to be battleships, only realising that they were the heavy cruisers *Trento* and *Bolzano* as the Swordfish were beginning their torpedo run. 'Observers in the [light cruiser] *Neptune* testified to the determined manner in which the attack was made', and although columns of water were seen, once again no hits were recorded.

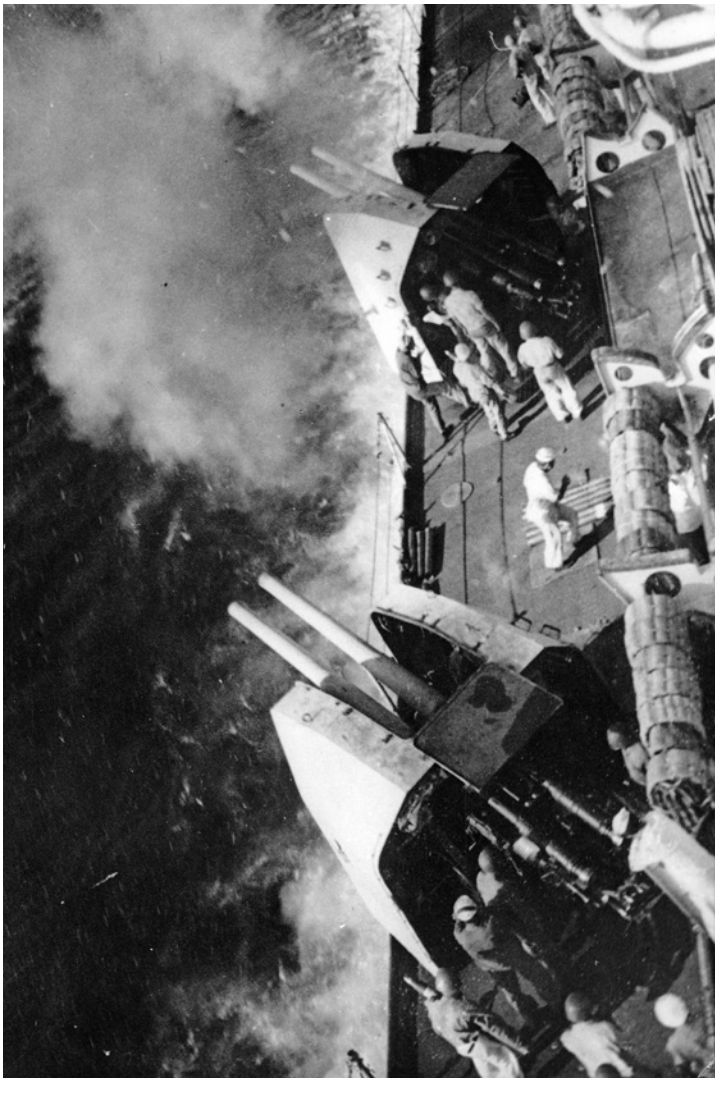
A third strike was feverishly prepared, by 813 NAS this time, but the necessary torpedoes had to be brought up from the magazine and prepared. By the time six aircraft were armed and ready to fly off, Cunningham had called off the pursuit.

Campioni decided that the fleet should put into Sicilian ports rather than try to reach Taranto with the Royal Navy still in touch. Cunningham decided to refuel the fleet at Malta. The battle itself was over, although further subsidiary actions would result. Of the FAA contribution, Cunningham wrote;

'I cannot conclude these remarks without a reference to HMS *Eagle*. This obsolescent aircraft carrier, with only 17 Swordfish embarked, found and kept touch with the enemy fleet and flew off two striking forces of nine torpedo-bombers within the space of four hours, both of which attacked, and all aircraft returned.'

RAF reconnaissance on 10 July reported three cruisers and eight destroyers in the Sicilian port of Augusta, where they were refuelling after the battle. Nine Swordfish crews of 813 NAS, led by Lt Cdr N Kennedy, were briefed to attack the warships under cover of darkness. As it turned out, all ships bar two large Navigatori-class destroyers had left by the time the Swordfish arrived. *Leone Pancaldo* had finished fuelling and was anchored in the middle of the harbour, while *Ugolino Vivaldi* was still tied up at the dock being refuelled. The harbour, a wide bay on the east coast of Sicily, was lit only by a quarter-moon, and there was haze hanging over the water. Although the conditions helped the Swordfish avoid detection, it also made the target confusing. As the aircraft groped about above the anchorage, the pilots had to interpret what they saw and do their best to make the attack work.

In the darkness, all crews mistook *Ugolino Vivaldi* for an oiler, its silhouette confused by the mole the vessel was tied up against. Four Swordfish made attacks, two at each ship. Three of the torpedoes missed or grounded on the bottom of the shallow waters around the edge of the harbour. Lt J Collins, flying the third aircraft of Kennedy's flight, scored a hit on *Leone Pancaldo*, which quickly sank. The following five aircraft found no targets, so returned with their torpedoes. All safely landed on Malta before transferring back to *Eagle*.



The waist-mounted pair of twin 100 mm/47 OTO Mod 1928 anti-aircraft guns on a Zara-class cruiser blaze away at attacking Swordfish while defending a Mediterranean convoy in November 1940 (*Author's Collection*)

The raid had been a mixed success. The intended targets had mostly already left, and some aircraft could not even find a ship to attack. One powerful destroyer had been sunk, but another had got away unharmed. The raid produced a number of valuable lessons. It proved that a night operation against enemy warships at anchor was viable, and that the Swordfish was a suitable platform for such an attack – this was important, for daylight raids were becoming too dangerous against defended targets as the aircraft was simply too slow. Successes like the first Tobruk raid could not be repeated, and defences were being strengthened at all important ports. However, the Swordfish's low performance and forgiving handling, as well as the visibility from its open cockpit, made the aircraft almost uniquely suitable for night and poor weather attacks.

The Augusta raid by 824 NAS also emphasised the difficulties of finding and identifying targets in darkness. Bit by bit the FAA's Swordfish squadrons were building up the knowledge they needed to fulfil their potential.

After the actions of 7–10 July, *Eagle* returned to Alexandria with the 1st Battle Squadron, withstanding determined air attacks from the *Regia Aeronautica* on the way. On the 19th, the fleet sailed at short notice when reports began to come in of the Battle of Cape Spada, between Royal Navy and Italian destroyers and cruisers. The Italian cruiser *Giovanni dalle Bande Nere* fled for Libya after being damaged. The Royal Navy thought it would put into Tobruk, and despatched the Mediterranean Fleet to attack the harbour, but in fact the cruiser had gone to Benghazi. *Warspite* flew off a 700 NAS Swordfish floatplane to scout Tobruk, where it was hit by anti-aircraft fire and the pilot forced to ditch. The two crew swam ashore and were taken prisoner.

At this point, the cruiser was still believed to be in Tobruk, and numerous other ships had been reported by reconnaissance flights. In response to these sightings, six 813 NAS Swordfish launched from *Eagle* that evening for a night strike on the harbour. Although there was more moonlight than there had been at Augusta, there was also much more

anti-aircraft fire. The Swordfish arrived at 2230 hrs and spent several hours working their way round the harbour, looking for targets and avoiding anti-aircraft fire. When the leader had identified the ships' locations and the best approach, the attack took place remarkably quickly. Within five minutes, the Swordfish scored direct hits on the destroyers *Nembo* and *Ostro* and the supply ship *Sereno*, sinking all three vessels. One Swordfish crashed after the raid.

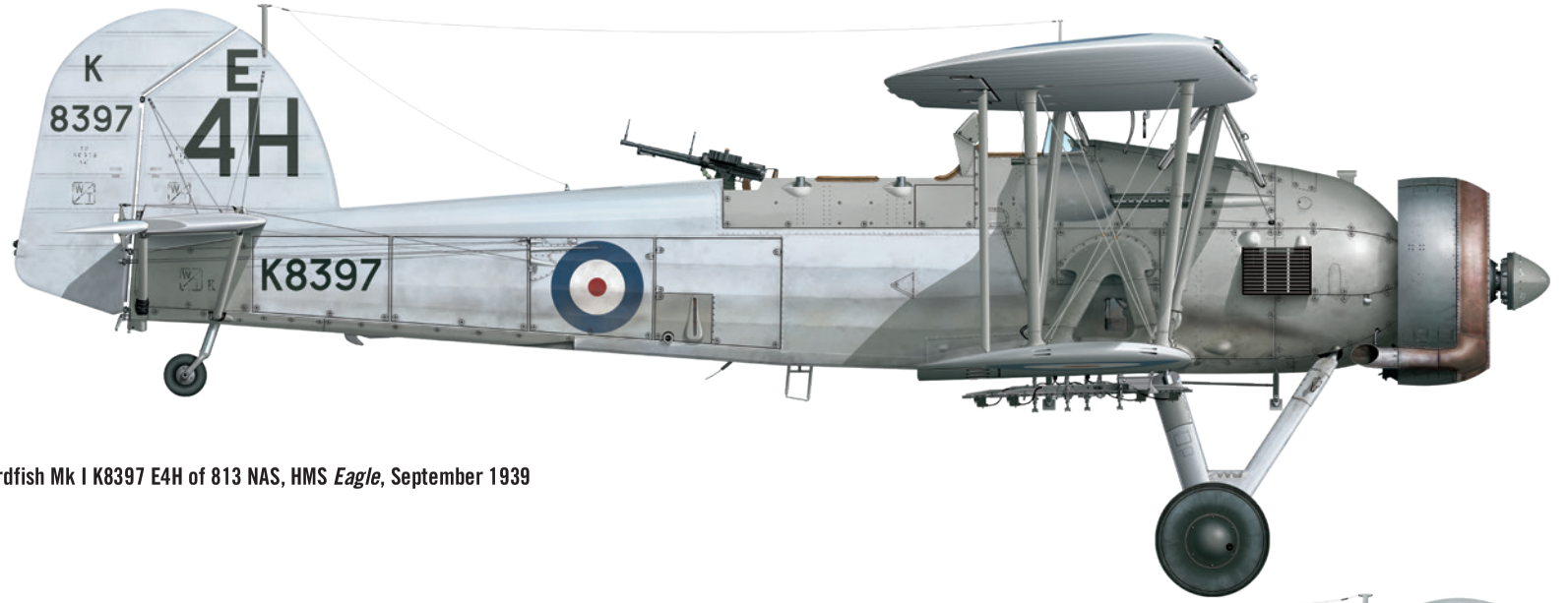
When the carrier subsequently returned to port, its aircraft disembarked to Maaten Bagush. The latter was only around 50 miles from Libya and within range of some coastal targets. The earlier operations from shore bases proved the effectiveness of *Eagle*'s aircraft operating under RAF control while disembarked, and at the forward bases they could respond to reports of shipping in Libyan ports.

On 22 August, an RAF Blenheim spotted two submarines and other vessels anchored off Gazala. There was little or no anti-aircraft cover, so a daylight raid was viable. It was at extreme range, even with refuelling at Sidi Barrani, in Egypt, so long-range tanks were necessary. Three Swordfish from 824 NAS fitted with cockpit tanks were armed with torpedoes and took off at 1000 hrs, led by Royal Marine Capt O Patch, flying west in loose formation. Two hours later, they arrived over the Gulf of Bomba and spotted a large submarine, a depot ship and what they identified as a destroyer (actually a large torpedo boat). Patch went straight in and torpedoed the submarine *Iride*, with spectacular results. The other two aircraft swung round the sinking submarine to attack the other vessels from either side. The auxiliary minelayer *Monte Gargano* also received a direct hit and rolled over, settling on its side in the shallow water.

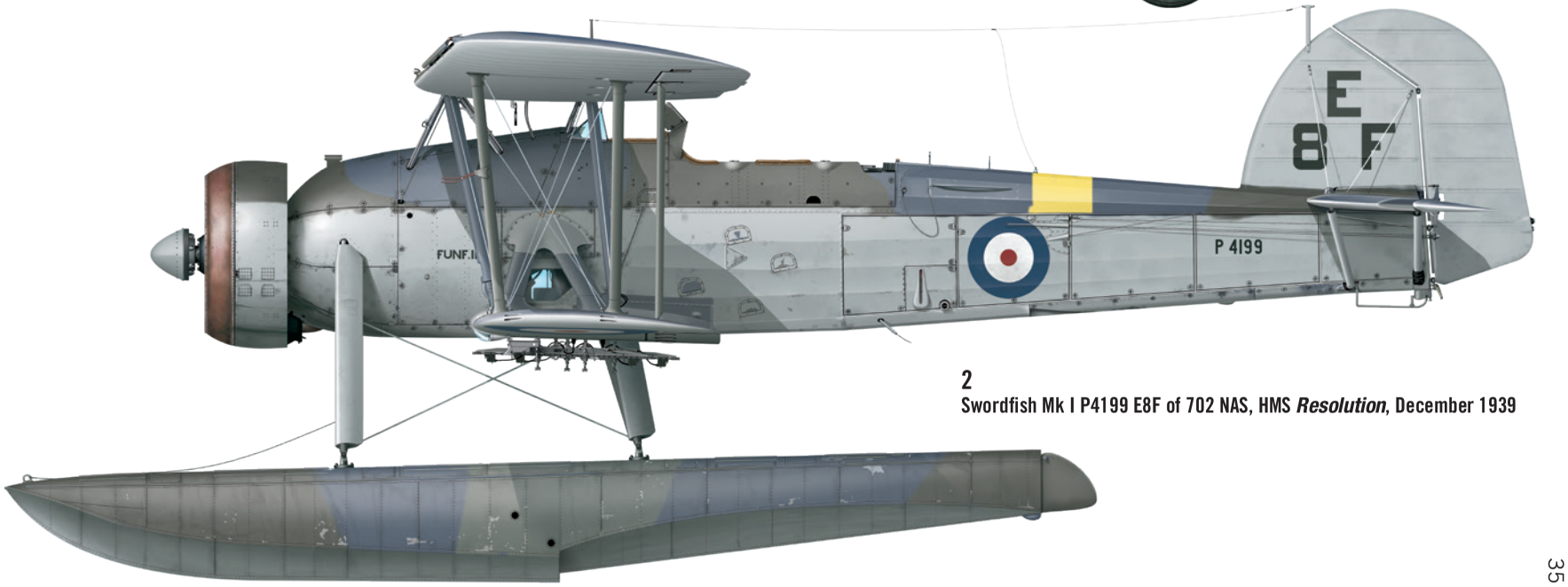
The Royal Navy, somewhat misinterpreting the evidence, believed that the Swordfish had sunk not just the *Iride* and *Monte Gargano* but the 'destroyer' and another submarine. Much was made of the FAA sinking four vessels with three torpedoes. In fact, there was no other submarine, and the torpedo boat *Calipso* was undamaged. The *Regia Marina* was able to rescue five men trapped in *Iride*'s stern compartment. Although the submarine rested at a shallow depth, it was never recovered.

In fact, the raid had been more disruptive to *Regia Marina* operations than the Royal Navy realised. *Iride* was modified to carry *Siluro a Lenta Corsa* (SLC) human torpedoes of the frogman assault unit 1ª *Motoscafi Armati Siluranti*, and at the time it was sunk the submarine was preparing for a raid on the Mediterranean Fleet in port. *Calipso* managed to recover the four SLCs, which were relatively lightly damaged, but the possibility of a raid on Alexandria was over for the immediate future. Whether or not it would have succeeded is open to question – it took until September 1941 for the *Regia Marina* to mount a successful attack with SLCs – but it could have completely altered the balance of power in the Mediterranean. The Swordfish of 824 NAS had, without realising it, removed a significant danger to the Allied war effort.

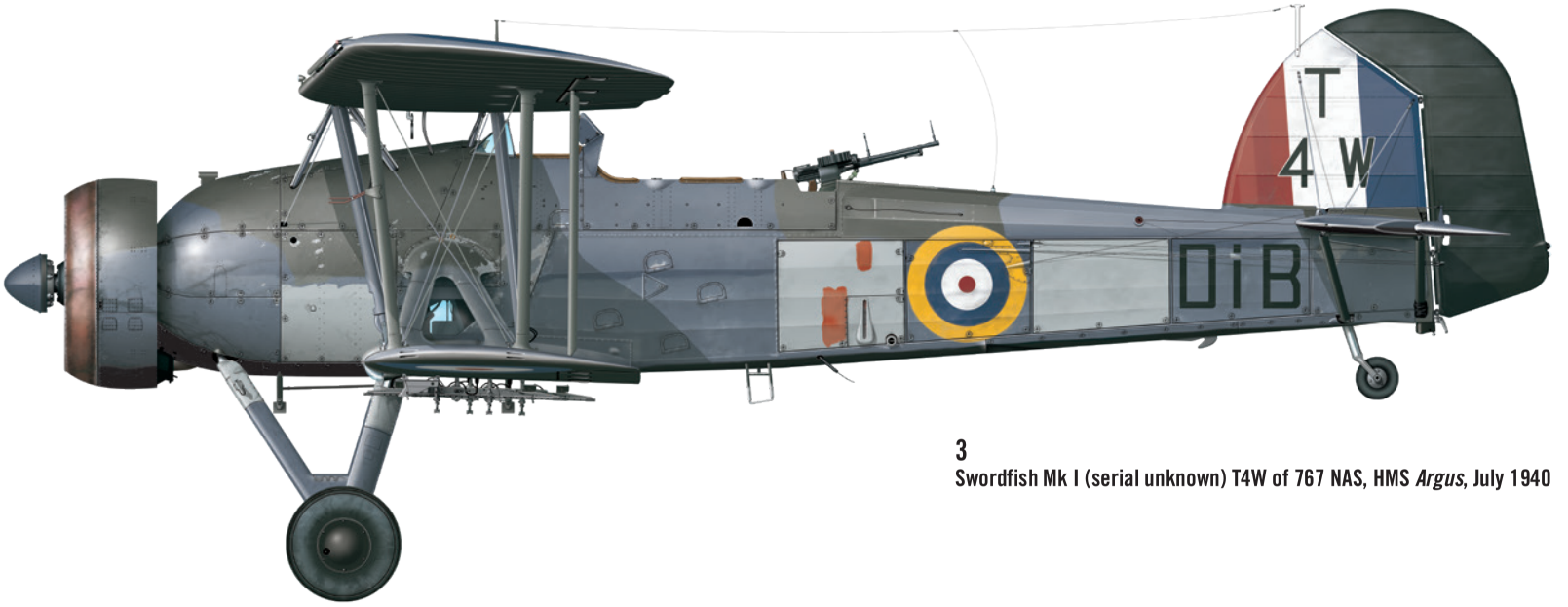
The following month, the Mediterranean Fleet was joined by HMS *Illustrious,* the first armoured aircraft carrier in the world. The *Illustrious*-class was the result of the Royal Navy's changing focus in the mid-1930s from a trade war in the open ocean – which *Ark Royal* had been developed for – to a European war close to land. *Illustrious* (*text continues on page 46)*



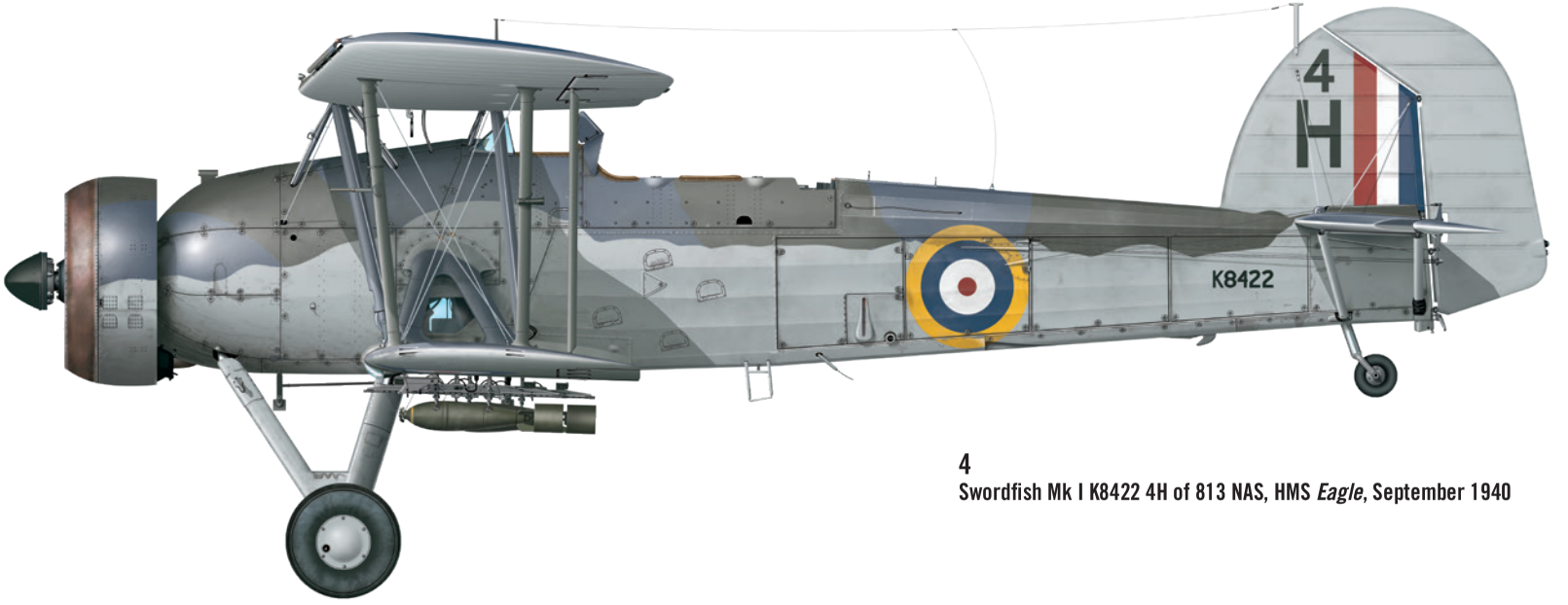
1
Swordfish Mk I K8397 E4H of 813 NAS, HMS *Eagle*, September 1939



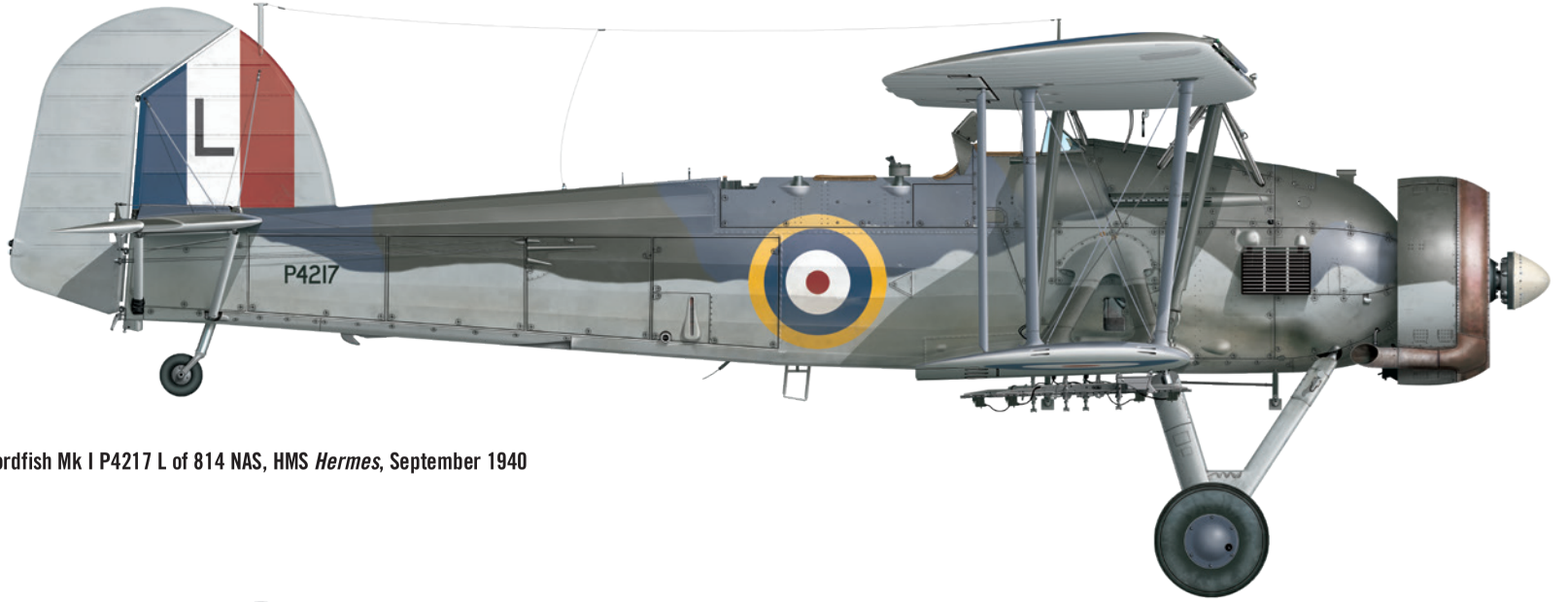
2
Swordfish Mk I P4199 E8F of 702 NAS, HMS *Resolution*, December 1939



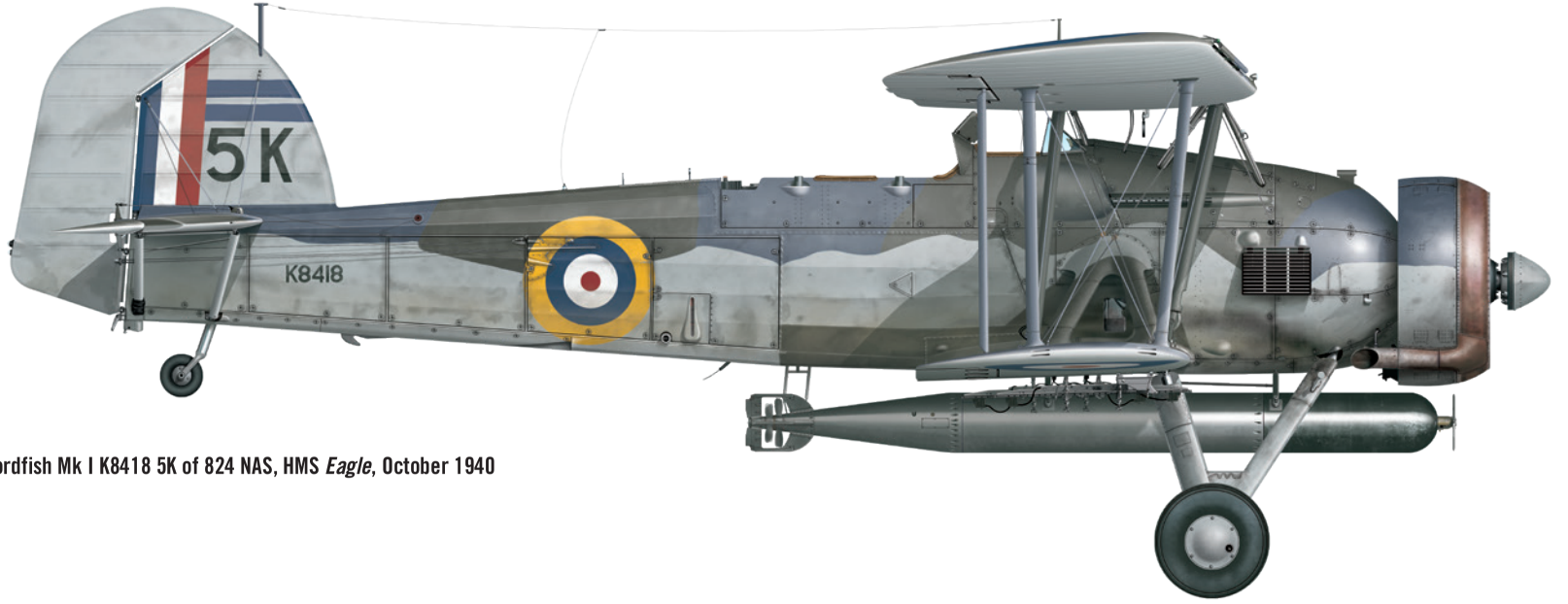
3
Swordfish Mk I (serial unknown) T4W of 767 NAS, HMS *Argus*, July 1940



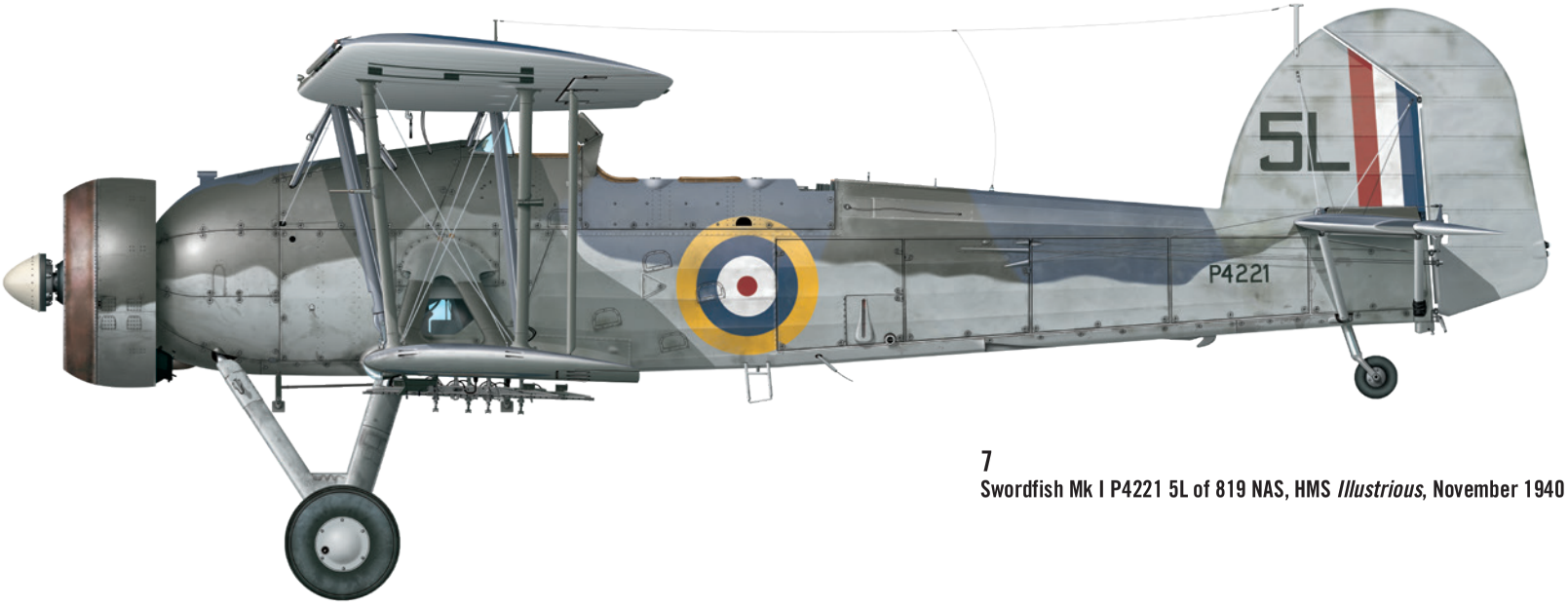
4
Swordfish Mk I K8422 4H of 813 NAS, HMS *Eagle*, September 1940



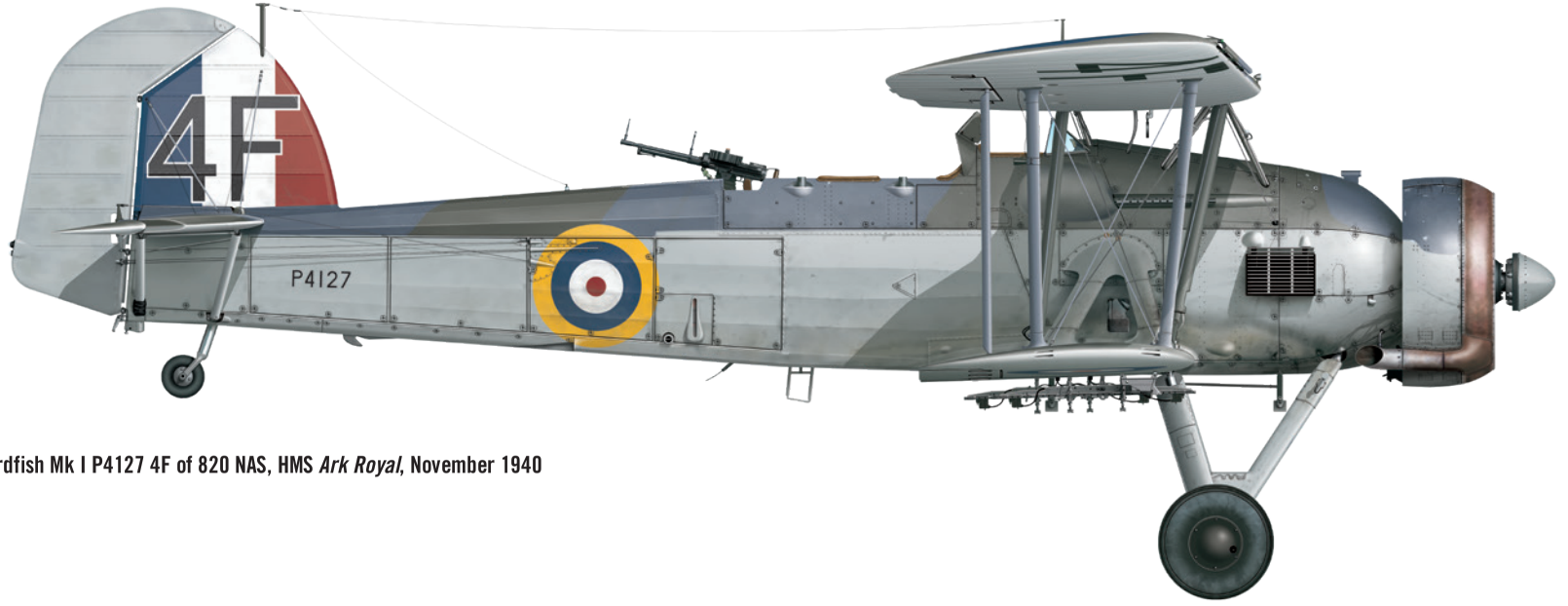
5
Swordfish Mk I P4217 L of 814 NAS, HMS *Hermes*, September 1940



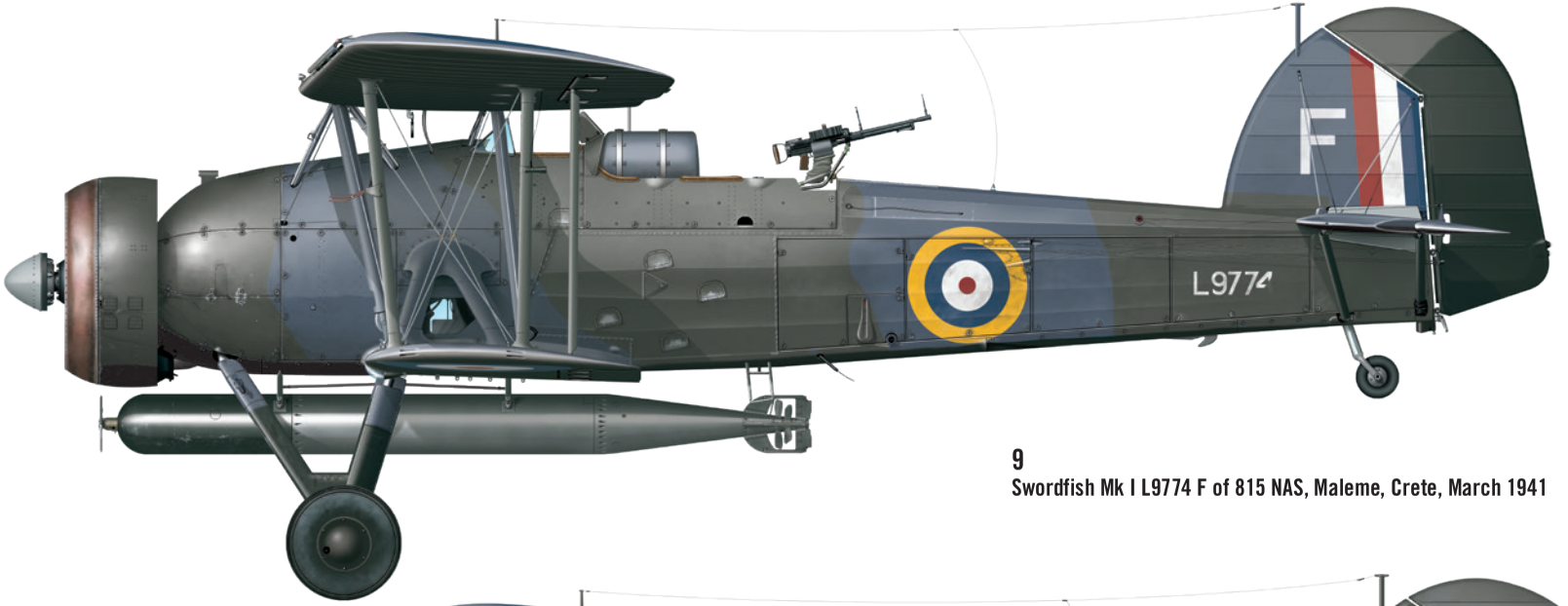
6
Swordfish Mk I K8418 5K of 824 NAS, HMS *Eagle*, October 1940



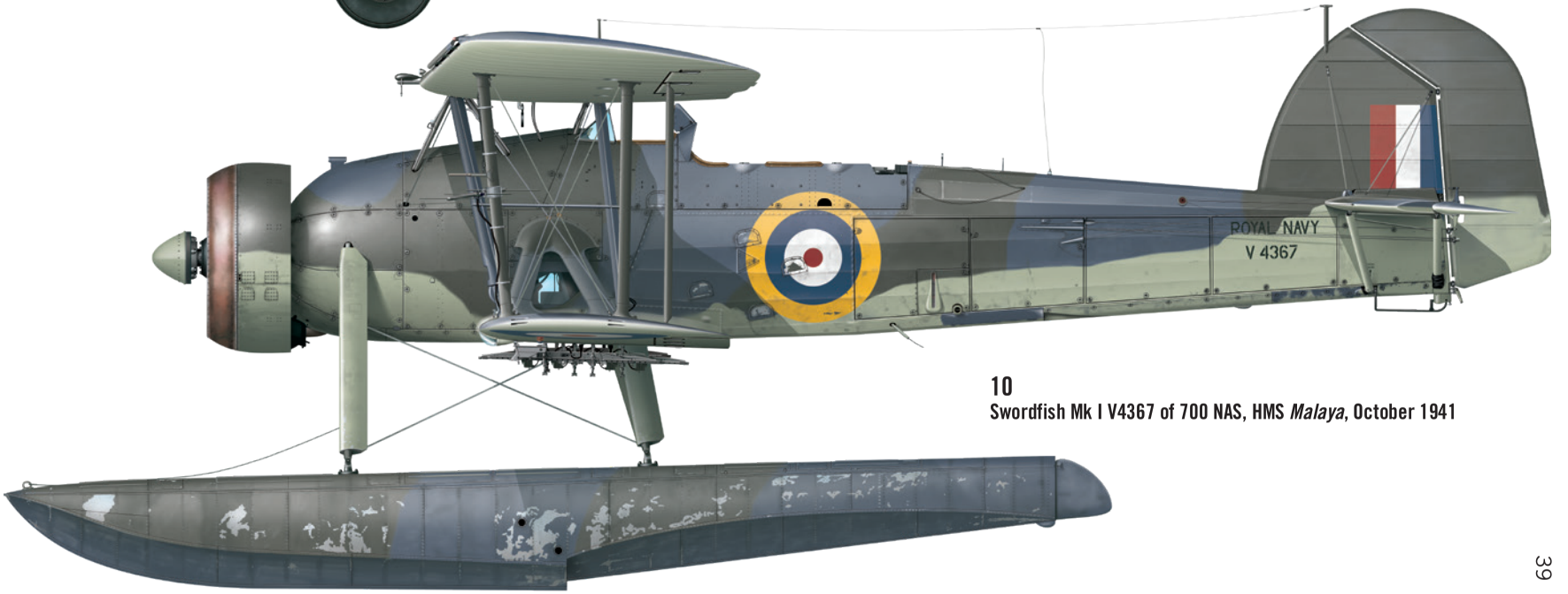
7
Swordfish Mk I P4221 5L of 819 NAS, HMS *Illustrious*, November 1940



8
Swordfish Mk I P4127 4F of 820 NAS, HMS *Ark Royal*, November 1940

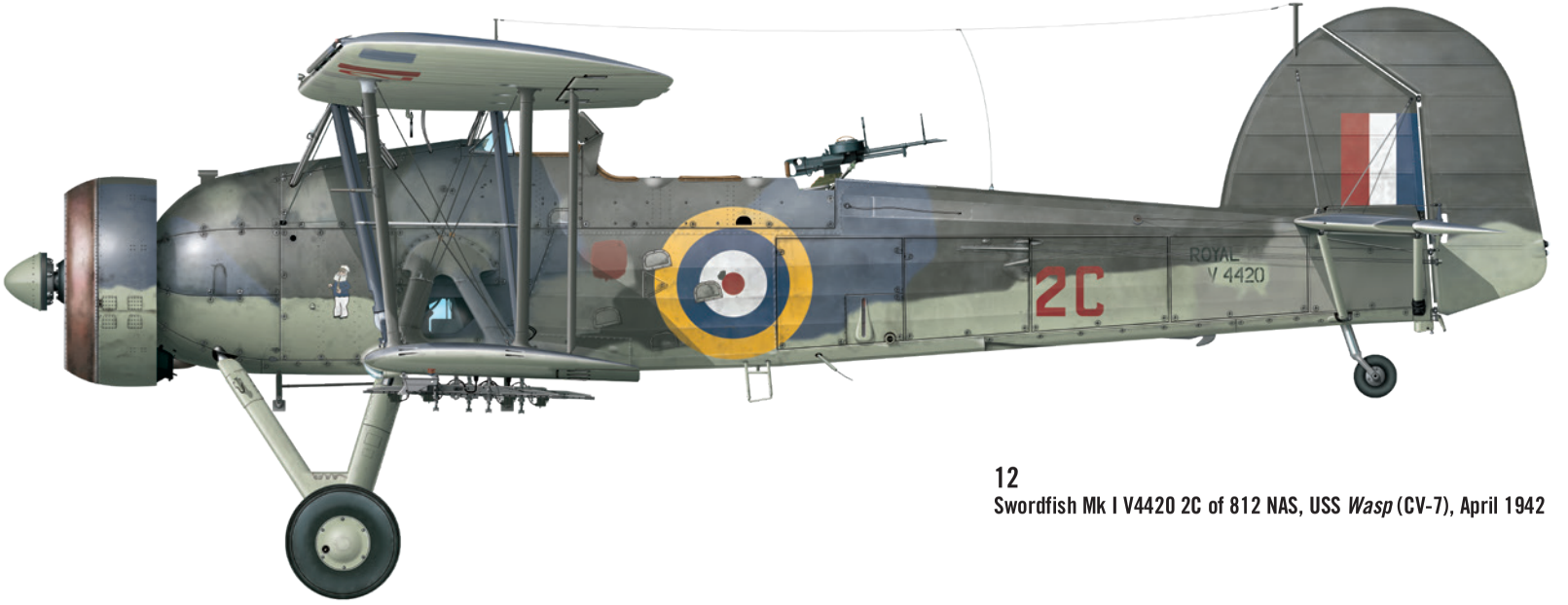


9
Swordfish Mk I L9774 F of 815 NAS, Maleme, Crete, March 1941



10
Swordfish Mk I V4367 of 700 NAS, HMS *Malaya*, October 1941

11
Swordfish Mk I W5909 of 810 NAS, HMS *Illustrious*, March 1942

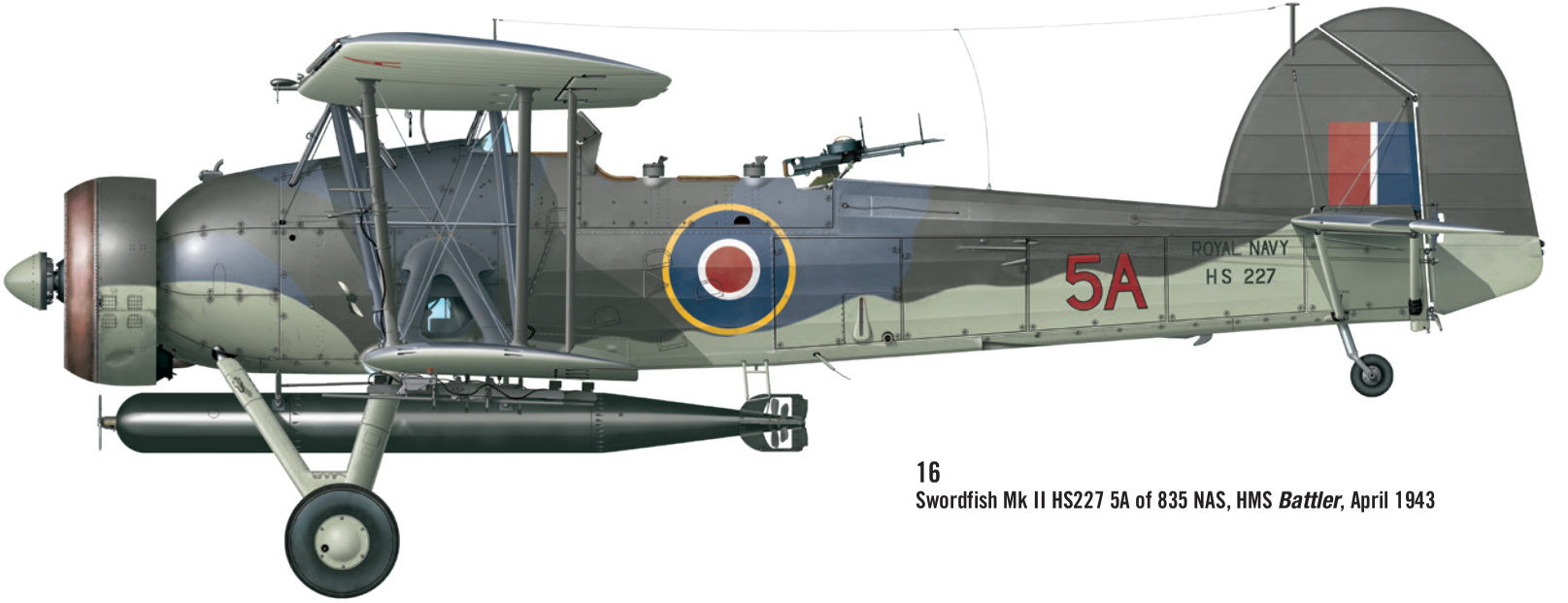


12
Swordfish Mk I V4420 2C of 812 NAS, USS *Wasp* (CV-7), April 1942

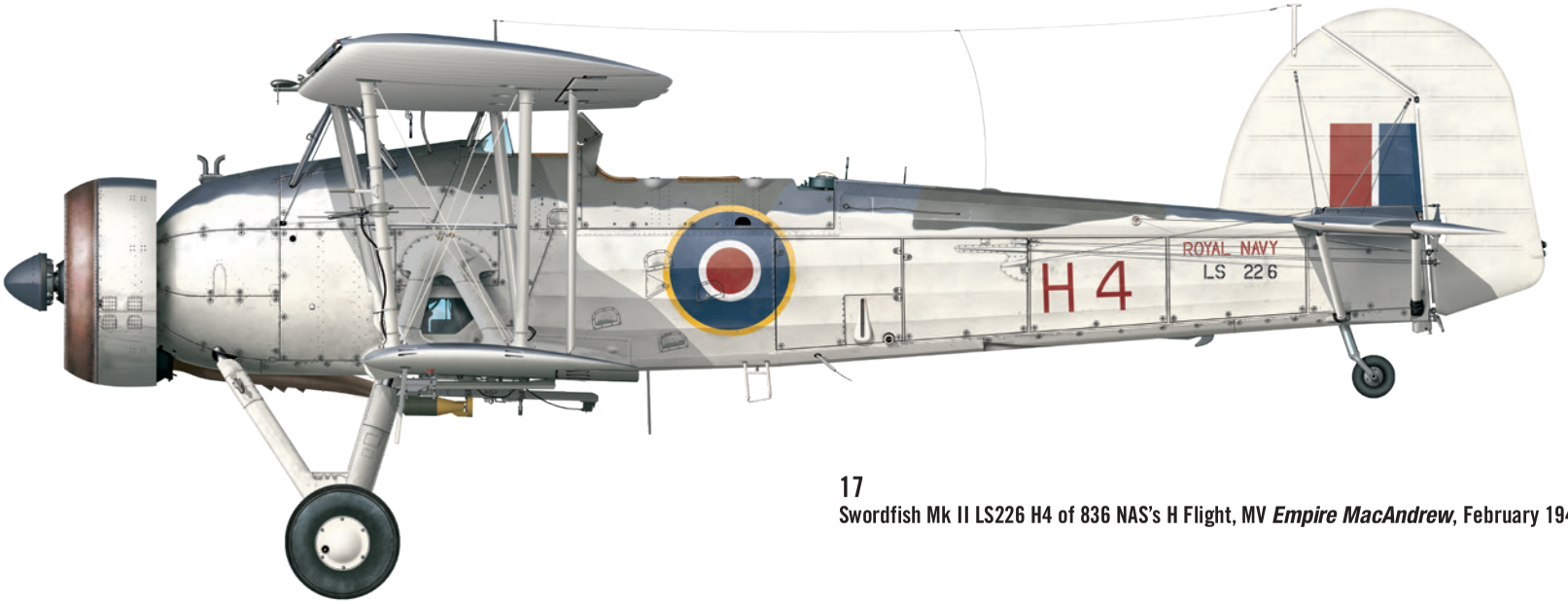
13
Swordfish Mk II DK782 B of 834 NAS, NAS New York, New York, August 1942

14
Swordfish Mk II DK694 A of 816 NAS, RAF Thorney Island, West Sussex, September 1942

15
Swordfish Mk I V4515 4A of 813 NAS, Tafaraoui, Algeria, November 1942



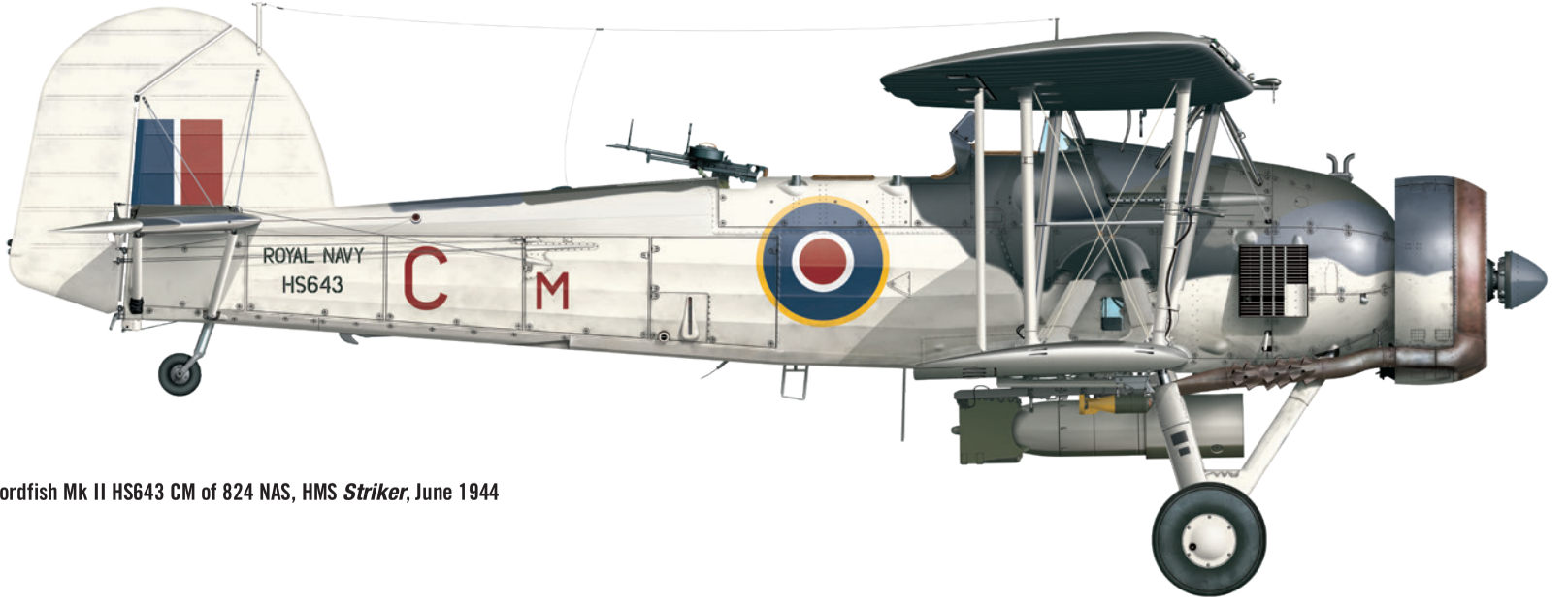
16
Swordfish Mk II HS227 5A of 835 NAS, HMS *Battler*, April 1943



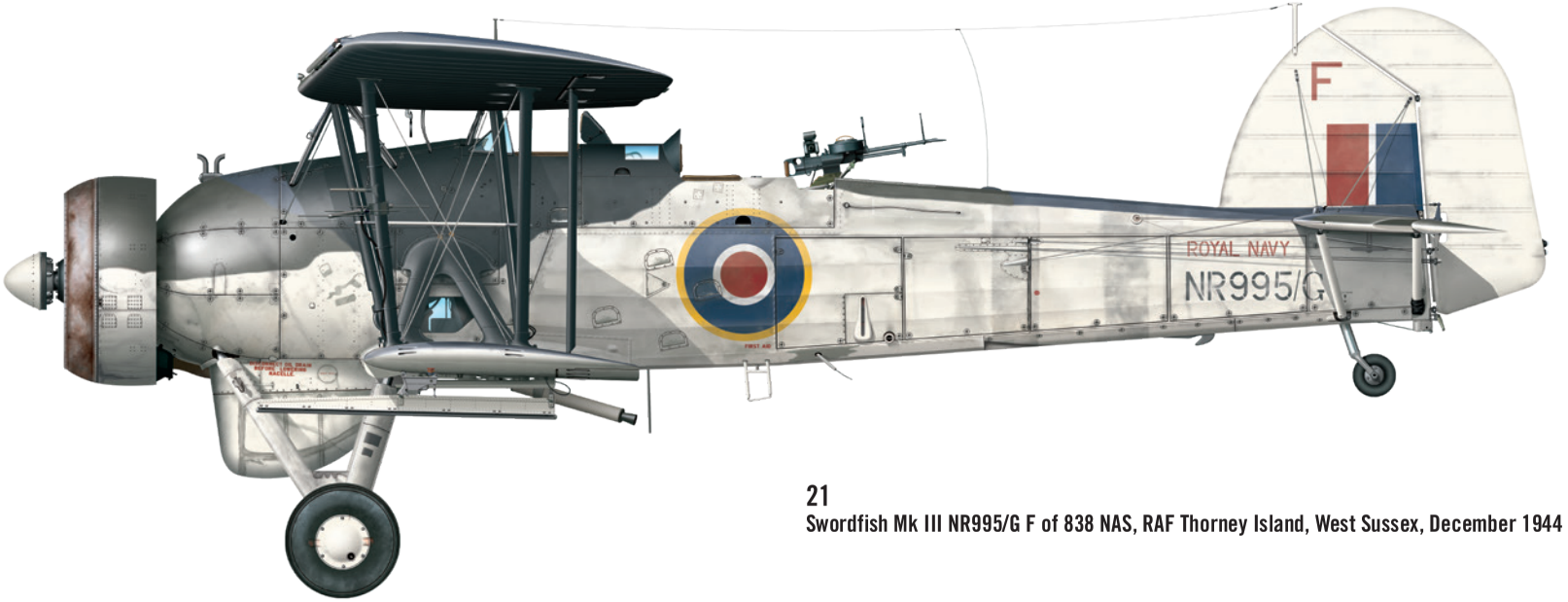
17
Swordfish Mk II LS226 H4 of 836 NAS's H Flight, MV ***Empire MacAndrew***, February 1944

18
Swordfish Mk II LS298 O3 of 860 NAS's O Flight, MV *Macoma* summer 1944

19
Swordfish Mk II NF243 S of 816 NAS, RAF Perranporth, Cornwall, June 1944



20
Swordfish Mk II HS643 CM of 824 NAS, HMS ***Striker***, June 1944



21
Swordfish Mk III NR995/G F of 838 NAS, RAF Thorney Island, West Sussex, December 1944

22
Swordfish Mk III NF410 NH-F of No 119 Sqn, RAF Bircham Newton, Norfolk, February 1945

and its sisters were built with an armoured 'box' around the hangar to protect the ship and its aircraft from bombs of up to 500 lb. While this made the carriers much more capable of surviving attacks by land-based aircraft, it limited the number of aircraft they could carry. *Illustrious*' initial standard complement of aircraft was only around half that of *Ark Royal*, although it still carried more than *Eagle*. On arrival in the Mediterranean, its air group consisted of 815 and 819 NASs with Swordfish and the Fulmar and Sea Gladiator fighters of 806 NAS. *Illustrious* was also fitted with air defence radar, further increasing its chances of survivability over *Eagle*.

P4221 5L of 819 NAS, which ditched off *Illustrious* due to contaminated fuel on 10 November 1940 – the day before the Taranto raid. All three crewmen were rescued and subsequently took part in the attack on the Italian fleet (*Author's Collection*)

Just two days after joining the fleet, *Illustrious* took part in Operation *MB3* alongside *Eagle*, launching strikes on targets on Rhodes, in the Dodecanese islands. The new carrier's air group was to attack Calato with 12 Swordfish armed with 250-lb bombs and incendiaries. Due to a crash on deck while the raid was being flown off, only nine aircraft took part. They arrived just as dawn broke, timed perfectly to see the target while they themselves were masked. The airfield at Calato was attacked by five aircraft of 819 NAS and one from 815 NAS, which had tagged onto the wrong group, while the remaining three from 815 NAS targeted a barracks. The attack was over in 45 seconds, and all the Swordfish got away cleanly, reporting aircraft and buildings destroyed at the airfield, and fires and explosions at the barracks.

Seven of *Eagle*'s aircraft subsequently attacked Rhodes' Maritza airfield. Lessons of previous raids were being incorporated. During the Norwegian campaign, senior officers had been frustrated by the lack of information about the effects of raids as pilots sought to deliver their attack and escape as quickly as possible. It led to the suggestion that one aircrew be charged with observing and recording the results. Sub-Lt F Stovin-Bradford, in the last aircraft to attack, displayed great coolness by sketching the results of the preceding aircraft as his was on approach to Maritza. Several hits were made on hangars, with parked aircraft damaged and destroyed by flying debris, while a petrol dump and buildings were burned out.

Unlike the raid on Calato, however, which was virtually unopposed, *Eagle*'s Swordfish found fighters taking off as they arrived. Lt J Wellham recalled, 'We had time to notice that the sky seemed full of [Fiat] CR.42s'. He escaped by diving to sea level and manoeuvring furiously while his Telegraphist Air Gunner (TAG) worked the Lewis Gun and the Observer joined in by firing flares from a Very pistol. Wellham finally shook off his pursuers with a 'tight, vertical turn towards the CR.42 while we were still almost on the surface

of the water', noting that 'any aircraft other than a Swordfish would have spun into the sea'. Four aircraft from 813 NAS failed to return, the Maritza mission being a sobering moment for *Eagle*'s Swordfish squadrons, which had mostly escaped serious losses until this point.

The opportunity was taken to give *Eagle*'s squadrons something of a rest now *Illustrious* was present. Units from the new carrier carried out a raid on Benghazi on the night of 17–18 September, with 815 NAS attacking shipping in the harbour with a mix of bombs and torpedoes, while aircraft from 819 NAS laid mines. The merchant ships *Gloria Stella* and *Maria Eugenia* were sunk, as was the destroyer *Borea*, while the torpedo boat *Cigno* and two utility vessels were damaged. Later that day the destroyer *Aquilone* hit two of the mines laid by 819 NAS and sank.

Both carriers' aircraft contributed to a strike on Tobruk on the night of 23–24 October, with aircraft from three squadrons decamping to Fuka, in Egypt. Four Swordfish from *Eagle*'s 824 NAS dropped bombs as a diversion while six aircraft from *Illustrious*' 819 NAS and four from 815 NAS laid mines in the harbour.

The opportunity for a strike on the Italian battle fleet almost emerged at the end of September while *Illustrious* was covering a convoy to Malta, but once again the demands on a single carrier to provide reconnaissance, anti-submarine and strike capabilities hampered efforts. Only a handful of Swordfish could be spared to mount a strike, and it was not considered safe to send so few aircraft in daylight against a strong enemy force. A dusk strike was prepared, but by that time the *Regia Marina* was returning to port.

The following month, Operation *MB6* involved raids on Portolago, on the Dodecanese island of Leros, by *Illustrious*' Swordfish squadrons on 14 October, with seaplane hangars and workshops, shore facilities and a floating dock, if present, being targeted. This raid was a diversion for Malta convoy MF 3.

TARANTO TO MATAPAN

The Swordfish of the Mediterranean Fleet were making their mark and becoming increasingly effective – in night or dawn strikes on shipping in port and other coastal targets rather than via conventional attacks on warships at sea. November would see the apogee of the nocturnal campaign.

While the Mediterranean Fleet had raided ports in North Africa and Sicily, it had not yet struck at the Italian mainland. The prize target – the *Regia Marina*'s anchorage at Taranto – had been out of reach. In the autumn of 1940, however, circumstances changed sufficiently to make the most audacious raid viable.

The increase in aircraft and crews available with the arrival of *Illustrious* was significant in itself, as was the fact that the carrier brought with it additional long-range fuel tanks. These were important as they allowed Swordfish to be launched further offshore. The possibility of a carrier strike on Taranto had been mooted during the Abyssinia Crisis and renewed later with the Munich Crisis. However, this came at great risk, and was only considered viable on the basis that aircraft carriers in the Mediterranean were likely to be sunk before long anyway.

The First Sea Lord, Admiral Sir Dudley Pound, remarked in 1939 that 'there is a great deal to be said for making an attack by air on the Italian fleet at Taranto. One reason for this is that I do not believe *Glorious* will be able to remain in a serviceable condition in the Mediterranean for very long, what with air and submarine attack, and it may be a good thing to get the most one can out of her before she is placed hors de combat'. *Glorious* had, of course, already been sunk by the time Italy entered the war, and the Royal Navy could not afford to put another of its scarce fleet carriers at additional risk. The availability of long-range fuel tanks in sufficient quantity for the first time enabled the carriers to remain at a relatively safe distance from land-based air attack.

Another factor was improved aerial reconnaissance from the RAF. The Mediterranean theatre was characterised by surprisingly close co-operation between the British-led services. The FAA provided an anti-shipping force when the Swordfish were disembarked and the RAF provided long-range aerial reconnaissance for the fleet, often carrying Royal Navy Observers. RAF capability was boosted in September with the arrival of new Sunderland flying boats at Gibraltar and Martin Maryland fast bombers on Malta. The latter in particular had the performance to photograph heavily defended targets.

Taranto, in the south of Italy, nestling at the base of the 'heel of the boot', was well placed for the *Regia Marina* to threaten the Malta–Alexandria supply line. Furthermore, its warships were well protected, or so it was believed, when in port. Taranto consisted of two harbours – the inner 'Mar Piccolo', which was entirely enclosed, accessed by a narrow channel, and the outer 'Mar Grande', protected by breakwaters and the island of San Pietro. Battleships had outgrown the inner harbour, which could now only accommodate cruisers and destroyers. The outer harbour was still relatively well protected, but offered the possibility of a torpedo attack.

The raid was planned for 21 October, but three days beforehand, in the rush to fit the long-range tanks, a fire broke out in *Illustrious*' forward hangar. The vessel had one of the best fire protection systems of any carrier at the time, which may even have been more significant to its survival over the course of the war than the armoured hangar. This prevented the fire from becoming catastrophic, but it still led to two aircraft being destroyed, three badly damaged and a great deal of work to strip and clean surviving airframes that had been doused with saltwater.

By the time *Illustrious* had put right the damage, the moon was in the wrong phase. A raid could have been carried out with flares, but *Illustrious*' crews had little experience with them. The attack on Taranto had to be delayed until November – it would mean more moonlight, but training was conducted with flares too. *Eagle*'s aircraft, meanwhile,

P4206 was one of the Swordfish loaned to *Illustrious* from *Eagle*'s 824 NAS to support the Taranto raid in November 1940. The aircraft's TAG has lowered his seat in an effort to minimise the cooling effect of the propeller's slipstream (*Author's Collection*)

attacked Maltezana, on the Dodecanese island of Stampalia, at dawn on 27 October, bombing hangars and an ammunition dump, as a diversion for convoy AN 5.

The next day, however, Italy invaded Greece. The Greek government appealed to the British government for help, which agreed, despite the marginal balance of forces in the region. British-led troops in Egypt now had to be transferred to Greece. A bold move was needed to ensure Italy could not take advantage of the Allies being spread so thin. A major, multi-faceted operation was implemented to respond to the new scenario. Four convoys were to sail between Malta, Egypt and Greece. At the same time, a group of warships prepared to run the gauntlet of the Sicilian narrows to reinforce the Mediterranean Fleet from the west. Finally, in Operation *Judgement*, Swordfish from *Eagle* and *Illustrious* would attack the Italian battle fleet in its anchorage.

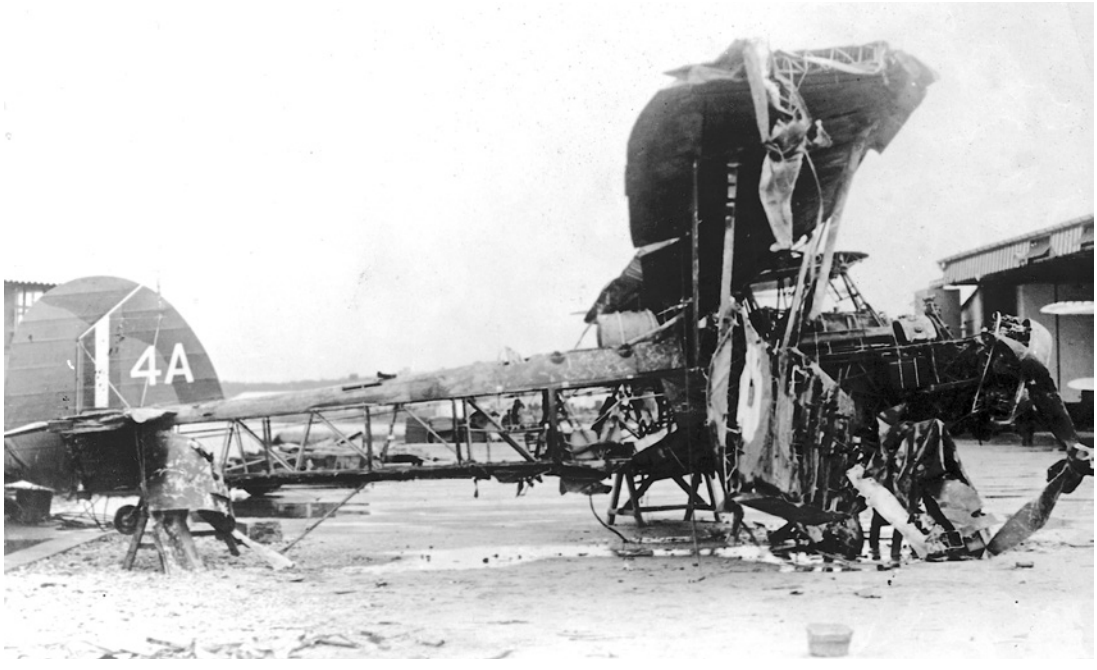
However, *Eagle* had developed faults in its aviation petrol system as a result of the shock from multiple bomb near-misses, and by the end of October the problem was so serious that it was obvious the ship needed dockyard attention. Reluctantly, Cunningham withdrew the carrier from the operation but temporarily transferred some of its Swordfish crews (five pilots and six Observers) and aircraft to *Illustrious*, as the older carrier's aircrew were by now well-trained and experienced. Nevertheless, the original plan for 30 aircraft had to be reduced, finally, to 21, after the withdrawal of *Eagle* and the loss of three of *Illustrious*' Swordfish with engine failures due to contaminated fuel.

The attack could not be postponed further, however. Torpedo nets were being extended, barrage balloons were being installed and anti-aircraft batteries strengthened, and before long, the opportunity might have gone. Even in November 1940, Taranto could be regarded as well defended, with plenty of anti-aircraft guns ashore and on the ships at anchor.

All the lessons of earlier raids were incorporated. To ensure that there were targets to hit, and the crews knew precisely where they were, together with the locations of anti-aircraft batteries, torpedo nets and balloons, reconnaissance was carried out as close to the date of operation as possible. To assist with target identification and acquisition, flares would be dropped along the line of the shore, silhouetting the battleships at anchor for the aircraft attacking with torpedoes. The flare-dropping aircraft would then dive-bomb ships in the inner harbour and the harbour facilities. A smaller number of non-flare-dropping aircraft would also make a dive-bombing attack on the inner harbour.

Illustrious took up position off the Greek island of Kefalonia on the night of 11 November, 170 miles to the southeast of Taranto. The strike force of 21 aircraft and crews flew off in two waves, the first of 12 flying from 2030 hrs and the second of nine leaving just over an hour later. The second wave suffered one aircraft damaged during take-off – Lt E W Clifford's L5F of 819 NAS was hurriedly repaired and took off 24 minutes after the previous aircraft.

Both waves flew in loose formations, heading northwest into the centre of the Gulf of Taranto, before turning to the northeast to approach the port. The first wave sighted Taranto at 2252 hrs, and the flare-dropping 815 NAS aircraft of Lt L J Kiggell (L4P) and Lt C B Lamb (L4B) detached,



Swordfish L4A of 815 NAS was flown by Lt Cdr K Williamson, who led the first striking force to attack Taranto on the night of 11–12 November 1940. His aircraft was shot down by anti-aircraft fire, although Williamson and his Observer, Lt N J Scarlett, survived and were taken prisoner. The long-range fuel tank installed in the aircraft specifically for the operation can be seen occupying the centre cockpit (*Author's Collection*)

heading for the eastern edge of the harbour, while the torpedo aircraft worked their way to the west so that they could approach towards the light.

At 2300 hrs the first flares lit up, and around 15 minutes later the torpedo aircraft arrived in two groups of three. The first group, approaching from the west, made for the southernmost battleships. L4A, the aircraft of the leader, Lt Cdr K Williamson of 815 NAS, was brought down by anti-aircraft fire while approaching the battleship *Vittorio Veneto*. Sub-Lt P D Sparkle in L4C could not make out *Vittorio Veneto*, so he launched his torpedo at *Conte di Cavour*, a modernised World War 1 battleship, hitting it. The third aircraft of the sub-flight, L4R of Sub-Lt A Macaulay, launched either at *Conte di Cavour* or the modernised battleship *Andrea Doria*, beyond.

Meanwhile, the other torpedo sub-flight was approaching from the north, skirting between the shore as it curved to the south and a group of anchored cruisers that were putting up fierce anti-aircraft fire, although the Swordfish of Lt M Maund became separated and approached from further south. All three attacked the new battleship *Littorio*, Lt N Kemp (L4K of 815 NAS) and Lt H Swayne (L4M of 815 NAS) from the north and Maund (E4F of 813 NAS) from the south, scoring two hits, one to the starboard bow and the other to the port stern.

Capt O Patch of 824 NAS (E5A), with Sub-Lt W C Sarra (L4L), Sub-Lt A Forde (L4H) and Lt J Murray (L4Q), all from 815 NAS, were detailed to dive-bomb the cruisers and destroyers in the inner harbour. However, these aircraft met somewhat more intense anti-aircraft fire than the torpedo-armed Swordfish and found it difficult to identify targets, as the inner harbour was not illuminated by flares. The ships were lined up invitingly, but Sarra struggled to see in the gloom, and chose to bomb the seaplane base instead. The flare-droppers went on to attack the oil storage tanks after their primary task was completed.

The second wave arrived at 2355 hrs, greeted by the anti-aircraft batteries still firing a barrage even though the previous wave had left 20 minutes previously. One of the flare-dropping aircraft, L5Q flown by 819 NAS's Lt W D Morford, had to turn back after the auxiliary fuel tank came adrift, reducing the strength to eight, while Lt E W Clifford in L5F had launched 24 minutes after the previous aircraft. Unperturbed, he endeavoured to catch up by steering a course directly for Taranto, rather than taking the dogleg route followed by the rest.

The remaining two flare-droppers, Lt R Hamilton (E5B of 819 NAS) and Lt R Skelton (L4F of 815 NAS), released their flares as planned, then bombed the oil depot. The five torpedo aircraft – Lt Cdr J D Hale (L5A), Lt C Lea (L5H) and Lt F M A Torrens-Spence (L5K) of 819 NAS, Lt G W L A Bayly (E4H) of 813 NAS and Lt J Wellham (E5H) of 824 NAS – all approached on the northern side. Bayly was shot down while attempting to torpedo the cruiser *Gorizia*, the aircraft being seen to blow up. Hale and Torrens-Spence went for *Littorio*, Hale scoring a third hit, while Lea launched at *Duilio*, a modernised battleship moored inshore of *Littorio*, and also scored a hit. Wellham had to take avoiding action to miss a barrage balloon, then took a hit in an aileron rod, losing control for a moment. When he regained control, he dropped his torpedo opportunistically at a ship he believed to be one of the *Littorio*-class vessels on the port quarter. Clifford arrived while the attack was in progress, and bombed the line of cruisers.

Other than the two aircraft that had been shot down, all Swordfish had returned to *Illustrious* by 0250 hrs the morning after the raid. Navigation, over open water at night, was exemplary. A reconnaissance flight from Malta was despatched when it was light, and the photographs examined promptly. Vice-Admiral Sir A B Cunningham, signalled the Admiralty;

'I do not wish unduly to raise your hopes but definitely appears that one Littorio-class is down by the bows with forecastle awash and a heavy list to starboard. Numerous auxiliaries alongside. One Cavour-class beached opposite entrance to graving dock under construction. Stern including "Y" turret is underwater. Ship is heavily listed to starboard.'

Later, Cunningham added;

'The stem only of northern Cavour-class battleship shows on photograph, but a fix from the entrance of Passagio Piccolo also just shows the bow is in about four fathoms. There is oil round the stem and it seems certain the ship has been beached.'

The photographs revealed three battleships beached to prevent them sinking. The new *Littorio* had received three torpedo hits, one of them in the bow having torn a huge hole causing flooding that could not be staunched. *Duilio* (misidentified above as a Cavour-class) also had a large hole in its bow and had been beached. *Conte di Cavour* was holed so seriously that it nearly rolled over, and the vessel had settled with only its upperworks above the surface.

The attacks on the inner harbour had been less successful – only two hits had been made, one on the cruiser *Trento* and the other on the destroyer *Libeccio*, but neither weapon detonated. In fact, few of the bombs directed at the inner harbour exploded, indicating faults with the 250-lb SAP bombs used. Despite this, the raid had, by any measure, been a spectacular success.

The *Regia Marina*'s immediately available battleship strength was halved. In time, all three of the sunken battleships would be raised, but *Conte di Cavour* was never returned to service, *Duilio* only rejoined the fleet after six months and *Littorio*, given every priority and all available resources, was out of action for four months. The effort needed to put the damaged battleships back in service potentially also delayed the arrival of the third and fourth Littorio-class ships. Even *Trento* received fairly serious damage from the ballistic effects of the unexploded bomb that tore through the main deck at the bow and punched its way out of the side of the hull. This required significant repairs and reinforcement. The seaplane base suffered two hangars and two aircraft destroyed, while the oil depot received light damage and had a significant volume of fuel burned.

Arguably, even more damage could have been done with more aircraft carrying torpedoes, rather than bombs. However, the planners were conscious that there were limited angles to approach the anchored ships from, and with more aircraft, the attackers could have started getting in each other's way or even colliding. Without defective bombs, some damage would have been done to the cruisers and destroyers too, and these were definitely worthwhile targets.

Somewhat ironically in view of later developments, a great contributor to the success of the operation was the use of magnetic Duplex pistol fuses for the torpedoes. This was designed to allow the weapon to run beneath a ship and detonate under the keel, where it was most vulnerable. It dramatically increased the torpedo's destructive potential over the simple contact fuse. In the conditions of the Battle of Taranto, it appeared to work perfectly. Perhaps unfortunately, its success increased the FAA's confidence in the device.

Eagle returned from repairs later in the month, and it and *Illustrious* took part in operations to cover more convoys, mostly now in support of Greece, and as diversions to operations taking place in the western Mediterranean (see Chapter 4). Again using flare illumination, *Illustrious*' Swordfish attacked Portolago on the night of 27 November, while *Eagle*'s aircraft bombed ships and facilities in Tripoli harbour 24 hours later.

The near-simultaneous raids by two carrier forces 750 miles apart was a significant feat for the FAA. However, *Eagle* had once again developed defects, this time to the stern glands (a collar of rubber or brass surrounding the propeller shaft that prevents water from entering the hull), so it went back into Alexandria for more repairs. The old carrier had been worked hard in the preceding six months, and was increasingly in need of a proper refit. *Eagle* was detailed to return to the less intense trade protection role when circumstances allowed.

Illustrious' crews kept themselves sharp with a raid on Rhodes and Port Maltezana on 17 December, six aircraft of 815 NAS attacking the former and six from 819 NAS targeting the latter, although thick cloud cover made it difficult and some crews had to find alternative targets. Five days later, the carrier was able to respond to reports of an enemy convoy forming off the northwest coast of Sicily. Nine Swordfish armed with torpedoes flew off at 1400 hrs, and a little over two hours later spotted the convoy, which consisted of two large merchant ships and a trawler, escorted by a destroyer. Both merchant ships were hit and sunk. The following day, 15 Swordfish attacked Tripoli.

It seemed that *Illustrious* and its Swordfish crews were on a roll. However, the carrier had proved so dangerous to the Axis that the Luftwaffe despatched anti-shipping unit X. *Fliegerkorps* to Sicily to neutralise the threat. On 10 January 1941, what seemed to be the usual attack by a small number of Italian aircraft west of Malta developed into an intense assault. At 1240 hrs, around 25 Ju 87 Stukas attacked the carrier, overwhelming its defences. High-level bombers then targeted *Illustrious* at 1330 hrs, followed by more Stukas and torpedo-bombers at 1620 hrs. Six hits and several near-misses from heavy bombs caused severe damage. The armoured deck was penetrated and fires started that were not under control until 0200 hrs the following morning.

The carrier survived the attack, but was so severely damaged that it would need major dockyard repairs. Seven of the vessel's Swordfish were able to land at Hal Far, on Malta, but 11 were destroyed during the raid and a number of aircrew killed. There were insufficient aircraft for two squadrons, so 819 NAS ceased to exist and its crews were absorbed by 815 NAS, which also took over X Flight of 821 NAS, recently delivered to Malta from *Ark Royal*.

With *Illustrious* out of action, *Eagle* once more had to step up, sailing with the fleet in February and March, before *Formidable* arrived at Alexandria on 11 March 1941. The withdrawal of *Eagle* on 15 April represented the end of the Swordfish's career as the main torpedo-bomber in the Mediterranean Fleet. Although it would continue to play a significant role in operations in the eastern and central Mediterranean for another year, this would overwhelmingly be from shore bases. *Formidable*'s two units, 826 and 829 NASs, were equipped with the new Albacore as their primary aircraft, although a shortage of them and heavier than expected losses to the type in combat meant that both units had to make up numbers with Swordfish for a time.

Formidable's air group reflected a shortage of aircraft of all kinds. When it sailed with the Mediterranean Fleet on 27 March in an effort to ambush the Italian battle fleet during a convoy escort, the carrier had only 14 TSRs, four of them Swordfish. This makes the success of what was to become known as the Battle of Cape Matapan especially remarkable.

With the usual requirement to carry out reconnaissance and anti-submarine patrols, the size of the strike forces that could be arranged was small, especially as two of the three strikes that took place that day (28 March) were daylight attacks. The first, in the morning, did not involve any Swordfish, although there was one among the reconnaissance aircraft.

In the second strike, launched at 1230 hrs, two Swordfish joined four Albacores. The better performance of the Albacores meant that when the strike leader went to full throttle to bring the aircraft into a favourable attacking position on the battleship *Vittorio Veneto*, the two Swordfish lagged behind. However, in an effort to avoid the Albacores, *Vittorio Veneto* turned through 180 degrees, which put the two Swordfish in position to attack on the starboard beam. One hit on the battleship resulted from this attack, although the torpedo was probably launched by one of the Albacores.

The weapon hit *Vittorio Veneto*'s port quarter and did immense damage, blowing off the port screw, ripping a hole through the keel to the centre

propeller shaft and stoving in the hull. It was only due to the superior design of the *Littorio*-class battleship that *Vittorio Veneto* survived and was able to continue at a fair speed, although the flooding was severe and its stern deck was almost awash.

The Swordfish of 815 NAS, shore-based since the loss of *Illustrious* and now operating from Maleme, on Crete, despatched three Swordfish at 0500 hrs, which failed to find the enemy. Another three aircraft set out at 1050 hrs, and attacked a group of cruisers, claiming one possible hit, although none were actually scored.

Joining the reconnaissance effort were 700 NAS Swordfish floatplanes from some of the battleships. Vice-Admiral Sir A B Cunningham noted that;

'Mention must here be made of the excellent work of HMS *Warspite*'s catapult aircraft (Lt Cdr A S Bolt DSC, RN Observer). This aircraft had, by a fortunate mistake, returned to the ship instead of going to Souda Bay as ordered. It was recovered, refuelled and catapulted as Duty Q at 1745 hrs. Within an hour-and-a-half, this experienced Observer had presented me with an accurate picture of the situation which was of the utmost value at this time.'

Now knowing that the battleship had been hit and the fleet slowed down, a third strike was prepared for dusk, in combination between *Formidable* and 815 NAS at Maleme. Two flights made up of three Albacores and one Swordfish each from 826 and 829 NASs from the carrier joined two Swordfish from 815 NAS. The latter arrived first and approached the Italian fleet to establish its identity and makeup. In doing so, the element of surprise was lost, and when the *Formidable* strike arrived, the ships had closed up into three columns and were putting up a fierce barrage.

An attempted formation attack was turned away by the strength of the anti-aircraft fire, and the Albacores and Swordfish split up to attack individually. Most attempted to get through the screen to attack *Vittorio Veneto*, but two aircraft – Swordfish L9774/F of 815 NAS's Lt F M A Torrens-Spence and Albacore 5A of 829 NAS's Sub-Lt G P C Williams – took their time to get into position, waited for the right opportunity and launched at a cruiser in the starboard column. One of these aircraft scored a hit on the cruiser *Pola*, which disabled it – most likely Williams, although Torrens-Spence long claimed that he was the pilot who had scored the fateful hit. The Italian commander detached two other cruisers and some destroyers to assist the hobbled *Pola*, and the group was detected by the Mediterranean Fleet's radar. The three cruisers and a destroyer were sunk by gunfire.

All the aircraft headed for Maleme, and landed safely apart from Albacore 5A and

Fitted with a long-range fuel tank in its centre cockpit, L9774 L4F was photographed from another Swordfish while both aircraft – and others from shore-based 815 NAS – were on their way to target enemy vessels in Brindisi harbour in April 1941. A few weeks earlier, L9774 had been flown from Maleme by Lt F M A Torrens-Spence during the Battle of Matapan (*Author's Collection*)

one of *Formidable*'s Swordfish which had been shadowing the Italian fleet and had to ditch in Souda Bay. The crew were rescued unharmed.

The role played by the FAA in the Battle of Cape Matapan had been straight out of the textbook – using torpedo attacks to slow down and weaken the enemy fleet to allow the big gun warships to attacks from a position of strength. Although Cunningham was bitterly disappointed that *Vittorio Veneto* got away, the Royal Navy destroyed three powerful, modern cruisers, significantly tipping the balance of such vessels in the theatre towards the Allies. The battleship would at least be out of action until August, and as *Littorio* had only recently returned after the damage received at Taranto, Matapan helped maintain the existing balance of battleships.

A renewed Axis assault on Greece meant there was no time for the FAA to rest on its laurels. In mid-April, the fleet sailed to the Libyan port of Tripoli to bombard its harbour, by which time *Formidable*'s TSR complement was made up of nine Albacores and six Swordfish, which contributed to flare-dropping and gunnery spotting to aid the battleships' aim.

The number of serviceable Albacores continued to fall, while replacement Swordfish were more available – Blackburn's new production line completed its first Mk I in the last days of 1940, and the supply of new aircraft had increased steadily since then. By 25 May, when *Formidable* sailed to raid Scarpanto airfield on the Dodecanese island of Karpathos, Swordfish outnumbered Albacores eight to seven. However, the newer aircraft were kept for offensive raids while the Swordfish were used for reconnaissance and patrol work.

On 26 May, after carrying out the attack on Scarpanto, *Formidable* was heavily bombed by Stukas, and while it remained afloat, needed significant repairs in a dockyard that would keep the carrier out of the war until the end of the year. After this, the Mediterranean Fleet lacked an aircraft carrier at Alexandria until April 1943.

Factory-fresh Swordfish Mk Is emerging from the new Blackburn production line, which began delivering aircraft from December 1940. Many of these new-build aircraft went to units embroiled in the fighting in the eastern Mediterranean (*Author's Collection*)

Swordfish of 818 and 820 NASs run up on the deck of *Ark Royal* in late 1940 or early 1941, the lead two aircraft each armed with six 100-lb anti-submarine bombs (*Author's Collection*)

CHAPTER FOUR

EAST AND WEST OF GIBRALTAR

After the attacks on the *Marine Nationale* in June and July 1940, Force H's focus returned once more to the Axis powers. From Gibraltar, Force H was well placed to operate into the western Mediterranean against the *Regia Marina* or the Atlantic against Kriegsmarine raiders. *Ark Royal*'s efforts in this period included covering convoys to Malta and flying off aircraft to reinforce that island's air defences. *Ark Royal* was rarely engaged with Italian naval forces in the same way as *Eagle* and *Illustrious* were.

The first fighter ferry operation that *Ark Royal* and its three Swordfish units, 810, 818 and 820 NASs, were involved in was Operation *Hurry* of August 1940. Force H escorted the training carrier *Argus*, which carried 12 RAF Hurricane fighters for Malta, guided by two Skuas.

As a diversion for the Hurricane transfer, a group of warships including *Ark Royal* detached during the night of 1–2 August for the subsidiary Operation *Crush*. Twelve Swordfish flew off at 0225 hrs armed with 250-lb bombs and mines to attack the airfield and harbour at Cagliari, on Sardinia, at dawn. Swordfish A2K of 810 NAS unfortunately crashed over the side on take-off, and no sign of the crew could be found, but the rest of the force formed up without difficulty and set off. Problems soon arose though, as dramatic changes in the wind made navigation difficult. One aircraft got separated from its flight, could not find the target and returned to the carrier. It was fully light when the remaining Swordfish found the target, and they were met with heavy anti-aircraft fire.

Nevertheless, the bombing aircraft pressed home their attacks and destroyed several hangars and buildings, as well as seaplanes at their moorings, and the mines were laid successfully in the harbour entrance. Swordfish A4F of 820 NAS was hit and had to force-land on the airfield at Elma, near Cagliari, whereupon its crew was captured. Most of the other aircraft received damage to one degree or another, but all made it back to *Ark Royal* despite poor visibility, changing wind direction and strength and low fuel.

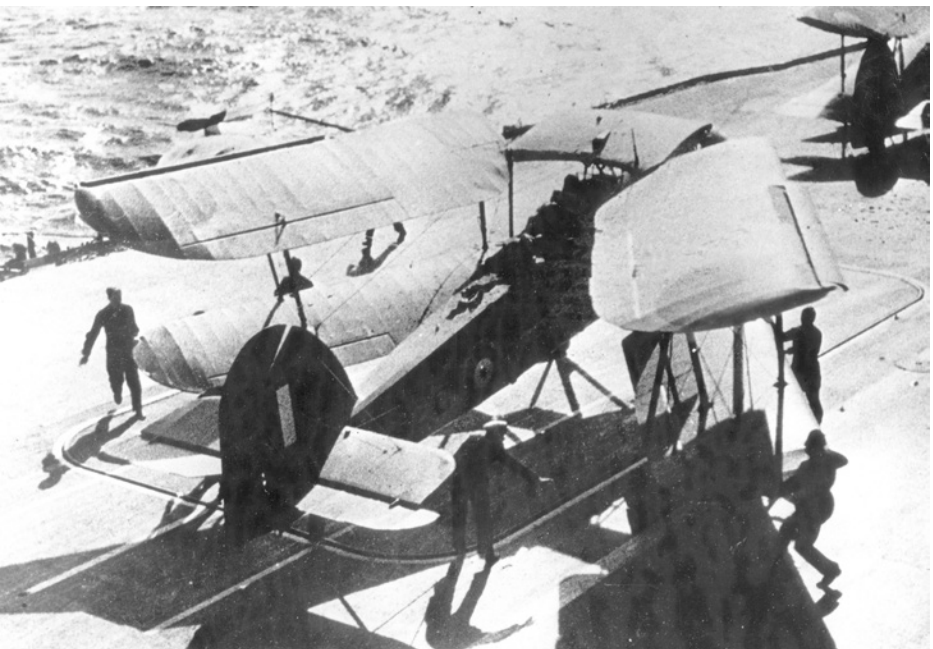
After this operation, Force H set course for Gibraltar. Three of the heavier ships – the battlecruiser HMS *Hood*, the battleship HMS *Valiant* and the light cruiser HMS *Arethusa* – returned home, but *Ark Royal* could not be spared. It sailed into the Atlantic for a few days' flying exercises in relative peace.

Vice-Admiral L V Wells struck his flag as Vice-Admiral, Aircraft Carriers on 20 August 1940 (having been replaced by Rear-Admiral A L StG Lyster), shortly after which he forwarded a series of notes and recommendations from his experience in the role to the Admiralty. These included some observations on the Swordfish;

'A day torpedo attack on a modern-day capital ship by Swordfish aircraft with the present torpedo equipment is unlikely to obtain any hits, and may result in over 50 per cent casualties.'

This reflected the experience of Norway and the first months of Mediterranean operations, and contributed to a growing sense that until aircraft of better performance were available, the best chance of success against enemy warships was likely to be found at night.

In late August, *Ark Royal* took part in Operation *Hats*, which saw the transferring of warships (including the new fleet carrier *Illustrious* – see Chapter 3) to the Mediterranean Fleet. The urgency of strengthening Vice-Admiral Sir A B Cunningham's forces meant that the much riskier passage through the Mediterranean from the west was taken, rather than the longer but safer voyage around the Cape of Good Hope and up through the Suez Canal. The attentions of the *Regia Marina* were taken up by Cunningham's sortie which resulted in the Battle of Calabria, so *Ark Royal* was able to reach the launching point for Operation *Smash* – another raid on Cagliari – unopposed on the morning of 1 September.



A2Q of 810 NAS has its wings carefully folded back alongside the fuselage prior to being struck down on the forward lift of *Ark Royal* in 1941 (*Author's Collection*)

Once again, the Swordfish had trouble finding the target, this time because they arrived in darkness and an effective blackout was in operation. Three aircraft from 820 NAS found what appeared to be a satellite landing ground and bombed it, whereupon the anti-aircraft batteries

at the main airfield began firing. This was so conspicuous that the other flights from 810 and 818 NASs were able to identify the target and bomb buildings and parked aircraft, with many of the latter seen in the open. One aircraft had to return with bombs hung up, then crashed on deck – fortunately the ordnance did not go off.

The following day, Operation *Grab* was carried out. This was a raid on Elmas airfield and a power station near Cagliari. Once again, difficult weather conditions troubled the Swordfish and few found the primary targets, although all aircraft located something to bomb and then returned safely to the carrier.

After the debacle of Operation *Menace* (see Chapter 2), *Ark Royal* returned to Liverpool in October for a refit, in the midst of the Battle of Britain. Many of its aircrew transferred out at this point in order to help build up new and reforming squadrons with their valuable experience. On returning to the Mediterranean in November, there was another raid on Cagliari as a diversion within the many interlinked operations that culminated in the Battle of Taranto (see Chapter 3).

Towards the end of November, Operation *Collar* – a complex combination of convoys and warship movements – was initiated. *Ark Royal*'s role was to provide distant cover should the *Regia Marina* oppose the operation. To Somerville's surprise, it did, and the subsequent skirmish would become known as the Battle of Cape Spartivento to the Royal Navy (or Capo Teulada in Italy). Italian intelligence noted the departure of both Force H and the Mediterranean Fleet, indicating a combined operation was underway. Admiral Inigo Campioni, the commander-in-chief of the Italian battlefleet, sailed from Taranto with his two serviceable battleships, *Vittorio Veneto* and *Giulio Cesare*, and a squadron of cruisers to intercept the Royal Navy force and give battle if circumstances were favourable.

At 0932 hrs one of *Ark Royal*'s reconnaissance Swordfish reported a force of warships. An hour later, the carrier was instructed to act independently and prepare a striking force. Somerville ordered the latter to be launched at 1100 hrs, and 11 Swordfish of 810 NAS duly flew off, while a shadowing aircraft reported the Italian fleet's position. The Swordfish's slow speed proved problematic against the fast Italian warships, and the striking force struggled to get into a favourable position on the bow after splitting up into sub-flights.

The battleships' manoeuvres served to separate the sub-flights further, meaning they attacked independently, allowing their torpedoes to be 'combed' – the ideal attack involved different groups attacking simultaneously so a turn in one direction would inevitably put one group of aircraft in a favourable position. This was difficult to co-ordinate with an aircraft as slow as the Swordfish against battleships nearly 50 per cent faster than the previous generation of capital ships.

The Swordfish crews believed they had scored one hit on *Vittorio Veneto* as a column of water was seen from several aircraft – in fact none of the torpedoes had hit, and the water column may have been from a prematurely detonating Duplex pistol. Campioni withdrew after the fleets had been in contact for less than an hour, ordered by his superiors to preserve the remaining battleships. *Ark Royal* flew off a second striking

force from 820 NAS at 1410 hrs, its commanding officer, Capt C S Holland, convinced that a hit had been scored on *Vittorio Veneto* and seeking to press home the advantage.

The Swordfish caught up with the Italian fleet as it was approaching the Sardinian coast. The flight leader deemed it too risky to target the battleships, deciding to go after the cruiser squadron instead. Once again, the attack was poorly co-ordinated and the warships managed to evade all the torpedoes. It was unfortunate that during the first and only occasion *Ark Royal*'s air group attacked the Italian fleet at sea, its squadrons had a high proportion of inexperienced aircrews. The slow top speed of the Swordfish had made it particularly difficult to arrange successful attacks.

While the major effort for reinforcing Malta's air strength went into providing fighters, there were also several smaller-scale operations to fly Swordfish to the island, as the TSRs were doing significant damage to Axis shipping (see Chapter 5). Since the Norwegian campaign, 821 NAS had been disembarked from *Ark Royal* at Hatston, and in December 1940 the main squadron disbanded. A remnant of six aircraft was formed into 821X Flight and embarked on *Argus* for transport to the Mediterranean (where the aircraft would be used to supplement 830 NAS), along with *Furious* carrying Hurricanes and Fulmars.

On the way out, 821X Flight was to provide anti-submarine cover to convoy WS 5A. However, the danger from surface raiders was also very real, and the convoy was caught largely unprepared when it encountered the heavy cruiser *Admiral Hipper* in the Atlantic on Christmas Day. The obvious move was to send Swordfish armed with torpedoes. However, *Argus* had no torpedoes in its stores, although *Furious* did, but the latter carrier had no Swordfish, nor could it have operated more than two given the sheer number of aircraft it was carrying – nine Fulmars and 40 Hurricanes for Malta, plus six Skuas for self-defence.

A plan was hurriedly worked out whereby *Argus* would send the Swordfish two at a time to *Furious* to be armed with torpedoes, after which they would be flown back to *Argus*. Having refuelled, all six could then be launched as a striking force. While *Furious* attempted to fly off her own aircraft for reconnaissance, *Argus* sent the first two Swordfish over – whereupon it was discovered that the remaining four Swordfish did not have all the necessary torpedo and navigational equipment. Capt M L Clarke, commanding *Furious*, considered sending the two torpedo-armed Swordfish along with some Skuas to make a combined dive-bombing and torpedo attack on *Hipper*. However, the weather was rapidly worsening and it reached the point where it was not safe to fly.

L7678 5G was one of five combat-weary Swordfish of 821X Flight flown off *Ark Royal* in January 1941 to reinforce Malta (*Author's Collection*)

In the event, the surface escorts dealt with *Hipper*, and the negligent state of the convoy's aircraft defences did not lead to the severe losses that could potentially have been inflicted. The lucky escape led to future convoy escorts being stronger.

The poor state of the 821X Swordfish was highlighted again when they were transferred to *Ark Royal* for passage to Malta on 30 December. Capt Holland complained to Vice-Admiral Somerville that the Swordfish lacked long-range fuel tanks, their torpedo equipment was incomplete and their guns were rusty. The transfer was delayed while *Ark Royal*'s maintainers brought the Swordfish up to standard, even exchanging an entire aircraft with 820 NAS.

After the Battle of Taranto, the *Regia Marina* withdrew its major warships to ports in the northwest. This put them into Force H's zone of operations for once, leading to Operation *Result*, a plan to attack battleships at Genoa. The Admiralty believed that *Littorio* was being repaired in the dockyard, and that *Giulio Cesare* had also been sent to Genoa after RAF bombing raids on Naples. In fact, both those vessels were at La Spezia, while *Duilio*, damaged at Taranto, *was* at Genoa.

The bombardment itself initially did not involve *Ark Royal* directly, although its Swordfish were detailed to make a diversionary attack on a dam on Sardinia. As it turned out, bad weather caused the planned bombardment on 2 February 1941 to be cancelled and severely hampered the dam attack. Eight aircraft of 810 NAS were launched despite strong and gusting winds, although the conditions did prevent the aircraft from forming up into one group as they set off for the target.

When the Swordfish arrived at the coast, however, conditions had worsened. The attack was meant to be made at dawn but the thick, low cloud and heavy rain meant it was still dark. The Swordfish orbited, waiting for daylight to arrive. Two became lost in cloud and had to return to *Ark Royal*. The others attacked separately, most flying above the cloud and looking for a gap, but Sub-Lt R S Charlier took the opposite approach and went below the cloud, following the Tirso river at no more than 50 ft. He later received praise for his initiative and skilful flying. In all, four crews located the target and were able to drop their torpedoes, although they did no damage to the dam. One Swordfish was shot down.

As the bombardment had been postponed, and there was little point in making a second attempt on the Tirso river dam, *Ark Royal* sent aircraft to bomb the oil refinery at Livorno and mine the harbour at La Spezia on 6 February. This time both operations went according to plan, although damage to the refinery was slight. A floatplane Swordfish of 700 NAS performed gunnery spotting for the battleship HMS *Malaya*. Unfortunately, its crew failed to notice *Duilio* in dry dock, so the opportunity to cause further damage to the battleship was missed.

The following month, Force H sailed into the Atlantic to support convoy SL 67 during part of its passage from Freetown to Liverpool. Preparations to meet both submarines and surface vessels were very much better than during WS 5A, which was just as well, because the battlecruisers *Scharnhorst* and *Gneisenau* were at sea on the raider mission Operation *Berlin*.

The vessels were spotted on 8 March by the destroyer HMS *Forester*, with that sighting quickly confirmed by *Malaya*'s floatplane Swordfish,

which continued shadowing the battlecruiser. Veteran Observer Lt Cdr W L M Brown (part of the crew that sank *U-64* during the Second Battle of Narvik – see Chapter 1) kept reporting the battlecruisers' position, but he was unable to locate *Malaya* at the end of the patrol. The Swordfish ran low on fuel and had to land at sea. Brown's distress signal was picked up by a Spanish merchant ship, which recovered the crew and towed the Swordfish to Spain. There, it was put into service with 54ª *Escuadrilla* at Puerto de le Cruz. Shortly after this, *Malaya*'s Swordfish was replaced with a Walrus – a change that occurred on warships throughout the fleet at this time. By the end of 1941 Royal Navy battleships were starting to dispense with their aircraft facilities altogether.

Back with convoy SL 67, *Ark Royal*'s Swordfish squadrons were hoping for the opportunity to attack the German warships. They were well drilled in both anti-submarine and anti-surface raider actions, during day or night, and maintained constant daylight reconnaissance. The weather was poor on 11 March and three anti-submarine Swordfish suffered broken undercarriages on deck before it was decided to arm them with the lighter (but less effective) 100-lb bomb instead of 250-lb depth charges. Another anti-submarine aircraft went missing.

On the evening of 20 March, a reconnaissance aircraft re-established contact with the two battlecruisers. *Ark Royal*'s hangar became the scene of feverish activity, arming all available Swordfish with torpedoes. However, Capt Holland demurred when he realised the aircraft could not reach the reported position before dark. Visibility was poor and, crucially, the carrier would not be able to use wireless telegraphy to home the aircraft back without giving away the convoy's position. The possibility of a night attack was ruled out, and a strike force was ranged at first light in case the warships could be located again.

As it turned out, the battlecruisers had withdrawn when they realised *Malaya* was with the covering force. By the time they were located again, they were too close to the French coast.

During that sortie, *Ark Royal*'s Swordfish, along with its Fulmars, searched 700,000 square miles. The crews had little opportunity to carry out strikes, but their shadowing and reconnaissance had noticeably improved over the two weeks they were supporting the convoy. This would pay dividends in the near future. On the negative side, however, during that period, the number of serviceable Swordfish fell from 27 to 15.

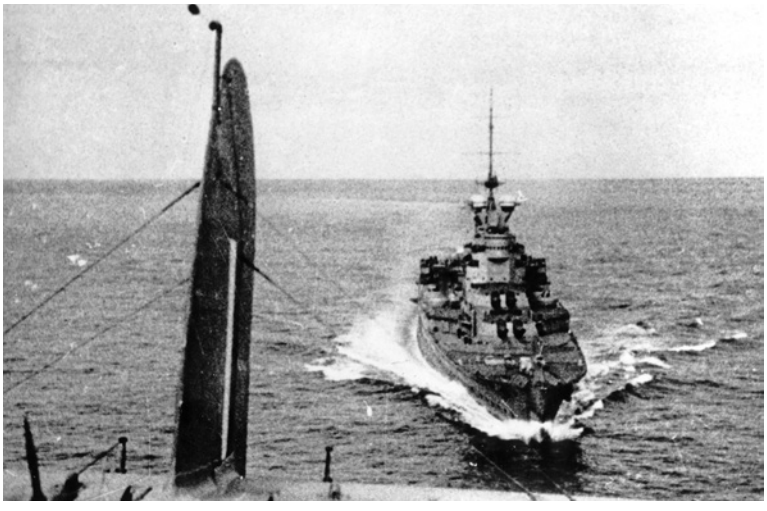
BISMARCK

Two months later, Force H would be presented with an even bigger opportunity, and this time it would not be missed. Operation *Berlin* had been a success, both in terms of damage to Allied supply lines and tying up Royal Navy assets so that they could not be used elsewhere, such as in the battle for Greece. On 19 May, the new battleship *Bismarck* set out on its own raider sortie, Operation *Rheinübung*.

This threatened to be a game changer. Unlike the Kriegsmarine's other big gun warships, *Bismarck* did not need to steer clear of convoys if they were supported by British battleships. Even more than for Operation *Berlin* and the earlier cruises of *Admiral Scheer* and *Admiral Graf Spee*, the Royal

Navy threw every resource into hunting the battleship down. Units of the Home Fleet put to sea from Scapa Flow, while Force H prepared to sail from Gibraltar in case *Bismarck* got through.

The Royal Navy's worst fears were confirmed when *Bismarck* met two of its most powerful capital ships, the veteran battlecruiser *Hood* and the brand new battleship HMS *Prince of Wales*, in the Battle of the Denmark Strait on 24 May. The German vessel sank the former and damaged the latter, only taking a single large-calibre hit in return. It seemed nothing could stop *Bismarck*.



An aerial view of the battlecruiser HMS *Renown* from the aft cockpit of one of *Ark Royal*'s Swordfish during the hunt for the battleship *Bismarck* in May 1941 (*Author's Collection*)

Also heading out from Scapa Flow was the brand new Illustrious-class carrier HMS *Victorious*. Such was the urgent need to stop *Bismarck* that the vessel was despatched despite not having finished working up or having a full air group aboard. There was only one squadron of TSRs instead of the customary two – 825 NAS, which had regrouped in the last year since suffering heavy losses over Dunkirk.

Although many of its crews had little in the way of combat experience, 825 NAS carried out an effective attack on *Bismarck* on the night of 24 May thanks in no small part to Lt Cdr E Esmonde, the unit's commanding officer. Three of the squadron's nine aircraft were fitted with ASV (anti-surface vessel) Mk II radar, which gave 825 NAS a big advantage in the poor visibility encountered by crews while targeting *Bismarck*. Only one aircraft became lost in cloud, with the remaining eight getting through to attack. The first two sub-flights closed on the battleship's port bow and port quarter, while the third attempted to come in on the starboard bow, but the leader was unhappy with the position and withdrew, coming in at low altitude on the port bow a short while later.

One torpedo hit amidships, and despite 'a tremendous shudder' going through the ship, it did little direct damage. The strike did, however, loosen temporary repairs made to the shell hit from *Prince of Wales*, allowing significant flooding to start again that soon put one engine boiler room out of action. Nevertheless, *Bismarck* managed to slip its pursuers, although the crew now had no choice but to put into a French port and repair the damage. The battleship was located again two days later, with the Home Fleet now far behind.

Force H, approaching from the south, was still positioned to make an attack, however. During the afternoon of 26 May, 14 Swordfish launched from *Ark Royal* and mistakenly attacked the light cruiser HMS *Sheffield*. Fortunately, the vessel suffered no hits, and even more fortunately, the ship's crew had noticed that several of the Duplex-fused torpedoes had exploded short.

Spotted on *Victorious*' soaked flightdeck, nine torpedo-armed Swordfish of 825 NAS (and two Fulmars on the stern) are readied for the *Bismarck* strike on 24 May 1941 (*Author's Collection*)

The decisive blow was struck during the evening of 26 May by a force of four Swordfish from 810 NAS, four from 818 NAS and seven from 820 NAS, all of which were armed with torpedoes fitted with contact fuses in place of the troublesome Duplex pistols. They took off at 1910 hrs in Force 6 winds, which increased to Gale Force 8 over the next few hours, with seven-tenths cloud and a large swell. To make sure there would be no repeat of the incident with *Sheffield*, the Swordfish were directed to find the light cruiser first, flying below the cloud until they had reached the ship. This provided the opportunity for *Sheffield* to signal the Swordfish with an accurate bearing from its own radar. Having located the light cruiser at 1955 hrs, the Swordfish climbed to 6000 ft, forming into six sub-flights in line-astern above the cloud until it was judged that they were just astern of *Bismarck* and upwind.

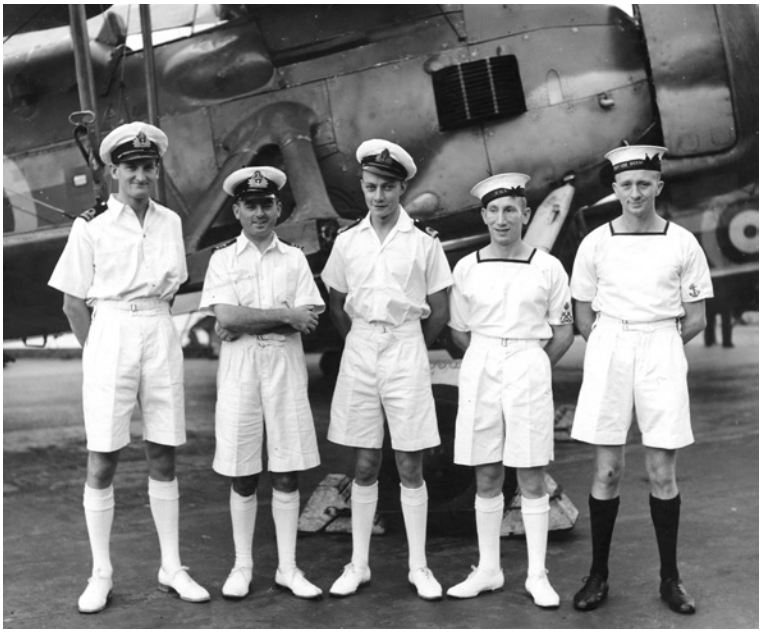
Things did not go entirely to plan – when the first sub-flight dived out of the cloud, instead of being right behind the battleship, they were four miles away. The sub-flights had been split up in the cloud, reducing the chances of a co-ordinated attack, and several crews found ice forming on their aircraft as they tried to pick their way through the murk. Nevertheless, three of the groups managed to attack at similar times from different angles, dividing *Bismarck*'s defences and confounding efforts to evade the Swordfish. One of the prisoners from the ship later remarked that 'the method of attack employed by the aircraft in approaching simultaneously from a number of points was most deadly', and 'whichever way *Bismarck* turned to evade one torpedo, she was constantly exposed to others'. Another prisoner said that 'the aircraft came down to the attack at an angle of approximately 50 degrees and darted through the barrage like flashes of lightning'.

As soon as the Swordfish emerged from the cloud they were met with fierce and accurate anti-aircraft fire, which they had to fly through as they were pressing their attacks home. The final sub-flight got lost and had to return to *Sheffield* for another bearing – by the time it reached the battleship, anti-aircraft fire was so heavy that crews could only launch at extreme range. Aircraft 4C of 820 NAS received around 175 holes from

splinters, including damaged longerons. While it brought its crew home, the Swordfish was effectively a write-off.

The crews had attacked bravely and skilfully despite the difficult conditions, and most had made good drops. They were confident that several hits had been made, and no aircraft had been shot down. On the other hand, they were not sure that they had done much to damage the mighty battleship.

It fell to one of the shadowing aircraft to report the truth. Two, possibly three hits had been scored. One or two struck amidships against the armour and did little damage. The third (probably dropped by Sub-Lt J W C Moffat of 818 NAS) struck the stern just above the port rudder and caused such catastrophic damage that the steering gear was irretrievably wedged. The Bismarck-class's stern was a point of weakness, designed for hydrodynamic properties at the expense of a lack of beam strength that made the rudders particularly vulnerable. Now, they were jammed at 10–15 degrees to port, leaving *Bismarck* circling uncontrollably.



Five of the nine aircrew of 825 NAS who received awards for their role in the action against *Bismarck* on 24–25 May 1941. Photographed on the flightdeck of *Victorious* in the Mediterranean after being congratulated on their efforts by Vice-Admiral Sir J F Somerville, these men are, from left to right, pilots Lt P D Gick and Lt Cdr E Esmonde (the squadron commander), Observer Sub-Lt V K Norfolk and air gunners PO L D Sayer and LA A L Johnson. Altogether, the squadron received one DSO for Esmonde, five Distinguished Service Crosses for officers (one of whom was already missing by the time this photograph was taken) and five Distinguished Service Medals for the ratings, as well as three mentions in dispatches. Esmonde and Johnson were later killed in the ill-fated Channel Dash operation on 12 February 1942 (*Author's Collection*)

This was the textbook application of the Swordfish's intended role – to damage and slow down an enemy capital ship so it could be caught and brought to battle by surface warships. Its other main role was to fix the enemy's position, and orbiting Swordfish now directed the pursuing warships onto their target. *Bismarck* was devastated by shelling from Royal Navy battleships and eventually sunk, either by torpedoes or by scuttling.

MOPPING UP

Bismarck was defeated but surface raiders still posed a danger to Allied shipping. The network of supply vessels in place to support *Bismarck* could do the same for smaller warships and auxiliary cruisers, and even if these were less powerful than the battleship had been, they were still capable of inflicting a toll on the vital supply routes. Fortunately, the breaking of the Enigma code allowed these ships to be located much more readily.

Ark Royal and *Victorious* spent time after the *Bismarck* action hunting for the heavy cruiser *Prinz Eugen*, which accompanied *Bismarck* until after the action with *Hood* and then detached. They failed to find the vessel before it put into a French port, but on 4 June *Victorious*' aircraft located the supply ship *Gonzenheim*, which was scuttled by the crew to avoid capture.

There was also a new programme of German blockade-running ships instituted in 1941 to transport items such as radar, bombsights and ball bearings to Japan, receiving much-needed raw materials such as tungsten,

molybdenum and tin in return. One such vessel was *Elbe*, which in early June was returning from the Far East with a hold full of supplies. Swordfish of *Eagle* were patrolling the South Atlantic after the carrier's tour in the Mediterranean, and on 6 June, near the Azores, an aircraft spotted a ship under a Norwegian flag which seemed suspicious in the way it looked and behaved, steering away and increasing speed when the Swordfish approached.

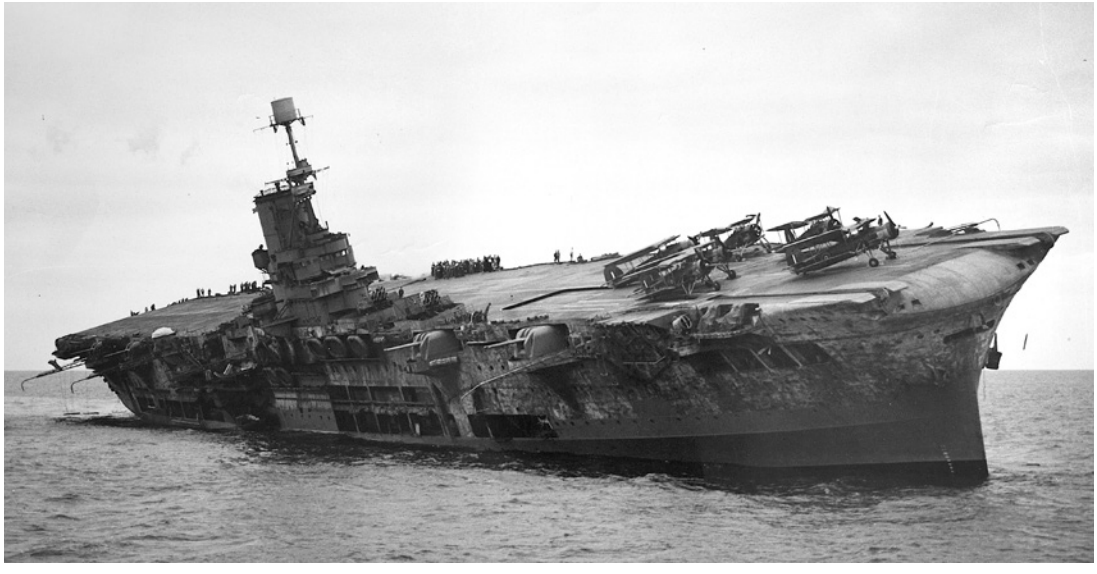
The aircraft attempted to stop the ship by firing warning bursts of machine gun fire, and then when that did not work the crew tried to bomb it. The pilot, Mid W L Hughes, returned to *Eagle* and a striking force was sent. When the Swordfish caught up with *Elbe*, they found it already on fire and the crew abandoning ship. They bombed the vessel anyway, just to make sure, and it began to settle by the stern.

Nine days later, the same pilot came across the U-boat supply ship *Lothringen*, which began firing at the Swordfish with a machine gun. He attacked with two 250-lb bombs, and this time was successful. Nevertheless, *Lothringen* remained afloat and the crew waved white flags. The light cruiser HMS *Dunedin* arrived and a boarding party rendered the vessel seaworthy – it was put into British service as *Empire Salvage*. *Eagle*'s South Atlantic cruise was cut short when a hangar fire put all but four Swordfish out of action in September.

After the *Bismarck* action more 'Club Runs' followed for *Ark Royal* in May and June, for which Swordfish were involved only in vital but generally tedious anti-submarine patrols. After Operation *Tracer* (the third 'Club Run') in June 1941, 820 NAS left *Ark Royal* to return home. Having been with the carrier since January 1939, the squadron required a well-earned period of rest and rebuilding. It was the end of 820 NAS's partnership with the Swordfish too, as the squadron re-equipped with Albacores in Britain. Transferring to *Ark Royal* in 820 NAS's place was 825 NAS, now fully worked up.

A major Malta supply convoy, Operation *Substance*, followed in July. *Ark Royal* flew off another six Swordfish for Malta during the night of 24–25 July, and five days later, nine of its own Swordfish bombed Alghero airfield on Sardinia as a diversion for a pair of cruisers dashing to Malta with 1700 troop reinforcements. The raid was repeated that night, and it went off smoothly until the Swordfish were being recovered on deck. A hung-up 40-lb bomb detached as one aircraft was landing and exploded, killing six of the carrier's crew, holing the flightdeck and setting fire to the Swordfish it had fallen from. It took an hour to put out the blaze and clear the deck, while the aircraft yet to land had to orbit, nervously husbanding their remaining fuel. Fortunately, all got down without further mishap. That month, 818 NAS was relieved by 816 NAS on board *Ark Royal*.

Another diversionary sortie was run in August. The fast minelayer HMS *Manxman* was despatched to sow a minefield off Livorno, on the Tuscany coastline, while *Ark Royal*, the battleship HMS *Nelson* and escorts performed a role as the main force in a largely fictitious operation. On 24 August at 0255 hrs, ten Swordfish from 825, 810 and 816 NASs attacked the cork forest at Tempio, on Sardinia, with incendiary bombs, partly to damage this relatively important raw material but mainly to make as big a show as possible. It worked, and *Manxman* was able to lay the mines unmolested.



Ark Royal lists dramatically to starboard after the carrier was torpedoed by *U-81* in the Mediterranean on 13 November 1941. The vessel's embarked Swordfish units at this time were 812, 816 and 825 NASs. The six aircraft spotted on the forward flightdeck eventually slid overboard shortly before the carrier sank (*Author's Collection*)

Another Malta convoy, Operation *Halberd*, followed in September. The Italian battle fleet came out, and was spotted by a reconnaissance Swordfish. *Ark Royal* flew off a striking force, but in the meantime Admiral Angelo Iachino, who had taken over from command of the Italian battlefleet from Campioni after the Battle of Cape Spartivento, decided to withdraw. The Swordfish found only empty sea and returned to *Ark Royal*. The last of the carrier's original wartime Swordfish squadrons departed the ship during this month, with 810 NAS being replaced by 812 NAS.

Although much delayed, and available in smaller numbers than originally intended, the Albacore was gradually replacing the Swordfish. On the next operation to supply TSRs to Malta, only two of the ten aircraft embarked in *Ark Royal* were Swordfish, the rest being Albacores.

Whilst returning to Gibraltar from a 'Club Run' on 13 November, *Ark Royal* was torpedoed by *U-81*, despite stringent anti-submarine precautions and its Swordfish maintaining inner and outer patrols. A combination of design flaws and procedures breaking down subsequently led to its loss from damage that need not have been fatal. The carrier's Swordfish that were in the air landed at Gibraltar's North Front airfield. No more could be flown off due to the increasing list, and the aircraft spotted on the bow huddled forlornly until they slid over the side shortly before the ship capsized and sank.

There were only sufficient aircraft to retain one squadron, so 816 and 825 NASs were disbanded and 812 NAS absorbed the remnants. The day after the surviving aircraft landed at North Front they embarked on *Argus*, where they took part in exercises with destroyers. At the end of the month it was decided to disembark 812 NAS at Gibraltar, where it became a valued part of the base's reconnaissance and anti-submarine force (see Chapter 5).

Ark Royal's place was taken by the old stalwart *Eagle*, the carrier arriving with its familiar squadrons (813 and 824 NASs) on 23 February 1942, having accompanied convoy WS 16 after it was reported that *Scharnhorst*

and *Gneisenau* were preparing to leave Brest for another Atlantic cruise. In fact, the battlecruisers were heading back to Germany, although the Royal Navy did not yet realise this (see Chapter 7).

Due to the need to embark more fighters than had been the norm in 1940, and as the chief mission for Force H's attached carrier was ferrying aircraft to Malta, the Swordfish squadrons tended to embark one at a time, the other remaining at Gibraltar while *Eagle* was at sea, or occasionally a detachment would embark on *Argus* for self-defence. *Eagle* was the only first-line carrier available for this role through to the summer of 1942, despite the vessel being small and suffering constant mechanical woes due to its ageing machinery. Operation *LB* took place in May, with *Eagle* and *Argus* sharing defence and ferrying duties – the carriers embarked a mix of Swordfish and Albacores, in addition to Fulmar fighters.

In June, Operation *Harpoon* was the next major effort to send a supply convoy to Malta. It was supported by *Eagle* and *Argus*, the latter taking Swordfish from 813 and 824 NASs for anti-submarine patrols, although the vast majority of hangar space was given over to fighters. *Harpoon* was only a partial success, and follow-up Operation *Pedestal* took place in August with much greater aircraft carrier cover. *Eagle* operated mainly Sea Hurricanes, with a small detachment of Swordfish from 824 NAS for anti-submarine cover. Sadly, *Eagle* was torpedoed and sunk by *U-73* on 11 August. Its two squadrons, now orphaned, merged into 813 NAS at North Front. In November, a detachment flew to Tafaraoui, in Algeria, following Operation *Torch* (the Allied landings in French North Africa (see Chapter 5)).

The only carrier-based Swordfish to contribute to *Torch* were those of 833 NAS, shared between the auxiliary carriers HMS *Avenger* and HMS *Biter*. They carried out anti-submarine patrols for the first three days of the operation before disembarking to North Front. The use of the Swordfish in support of fleet operations was effectively over, with the Albacore, Barracuda and American-built Avenger now established, although the type would remain in frontline roles from shore bases and with supply convoys for most of the rest of the war.

W5855 4H of 813 NAS after a heavy landing on *Eagle* on 13 June 1942. The aircraft, deemed irreparable, was stripped of useful parts and pushed over the side (*Author's Collection*)

CHAPTER FIVE

MEDITERRANEAN SHORES

As had been predicted before the war, it was difficult for aircraft carriers to operate safely in the Mediterranean. With 1941 seeing the withdrawal of the severely damaged *Illustrious* and *Formidable*, and the sinking of *Ark Royal* by submarine, there were rarely enough flightdecks for the FAA to properly support the Royal Navy. Shore-based Swordfish operated out of Malta from July 1940 and Gibraltar from December. During 1941, regular shore-based Swordfish operations were established from Crete, then Egypt and, finally, from French North Africa following *Torch* in November 1942.

The value of Malta as an 'unsinkable aircraft carrier' was recognised at the beginning of the war with Italy, and 830 NAS formed at Hal Far on 1 July 1940 from a part of 767 NAS that had hurriedly been made operational the previous month (see Chapter 2).

The Swordfish of 830 NAS were, incredibly, the first strike aircraft to be based on Malta during the war. With the biplanes having fetched up on the island through circumstances (the fall of France) rather than any plan, Malta HQ was initially unclear about how to employ them. An obvious role was to support the Mediterranean Fleet whenever Vice-Admiral Cunningham required additional strike or reconnaissance aircraft when his warships were within range of Malta. This would at best only be an occasional activity, so the question of 830 NAS's regular employment was still open. The options considered by Malta HQ and Cunningham were

Swordfish 5F of 824 NAS, embarked in *Eagle* and armed with a pair of 250-lb depth charges, orbits over a Gibraltar convoy in January 1942. This unit was based at Gibraltar's North Front airfield for lengthy periods in 1942, alternating embarkations aboard *Eagle* with 813 NAS (*Author's Collection*)

A rare photograph of Swordfish M (fitted with a long-range tank and carrying a Mk XII torpedo), thought to be K5945, of 830 NAS during the unit's anti-shipping campaign based at Malta. If indeed K5945, this aircraft was shot down during a raid on a convoy on 21–22 November 1941 off Cape Spartivento (*Author's Collection*)

anti-submarine patrol, shipping strike and night bombing against Sicily – in fact, three RAF Swordfish, belonging to No 3 Anti-Aircraft Co-operation Unit (AACU), were already employed on Malta undertaking anti-submarine duties.

At first, the night bombing role was favoured, with raids on Sicily's Catania airfield, damaging hangars and a S.79 bomber, and harbour facilities at Augusta. There were also two abortive attempts to catch Italian warships at sea but no contact was made. However, the ability of Malta-based TSRs to attack supply lines between Italy and Libya was soon recognised, and the astonishingly successful contribution of 830 NAS to the Allied war effort began. Long-range fuel tanks were fitted in August, although the aircraft still lacked the latest specification of instruments which greatly aided night-flying, especially at low level.

Tragically for the squadron, on 11 November, an operation to attack a convoy at night with eight Swordfish led to the loss of half the force. Four aircraft turned back with engine trouble, and the remaining four found themselves battling a powerful sirocco wind that blew up suddenly. Lt Cdr J G Hunt, leading the flight, realised they had insufficient fuel to reach Malta against the wind, so turned for Sicily, where all four had no choice but to ditch. One aircraft crashed and the crew were killed, although the remaining personnel survived to become PoWs.

In January 1941, Swordfish from the heavily bombed *Illustrious* were put ashore on Malta, along with their surviving aircrew and maintainers. That month, attacks on supply convoys began in earnest, including one on 27 January. An RAF Sunderland flying boat had spotted an Italian convoy off the island of Lampedusa in the morning. A force of seven Swordfish, escorted by two Fulmar fighters, took off armed with a mix of bombs and torpedoes and attacked from up-sun in three sub-flights. The Swordfish sank the steamer SS *Ingo* and damaged other vessels.

Capt C Moody, Director of Naval Air Division (which was responsible for administration, control, policy and organisation of the FAA), subsequently called this action a 'classic' example of 'perfect co-operation and execution', and it was taught at FAA training units as a model attack. Most convoy interceptions, however, were carried out at night. Cunningham approved, although he regretted that more raids could not be carried out.

In fact, it was only by maintenance crews working miracles in the difficult conditions of Malta, under frequent air attack and with little in the way of supplies and spares, that the squadron was able to achieve what it did. There were 21 anti-shipping or minelaying raids in the first half of 1941, and a steady sortie rate was maintained thereafter. Successes included sinking *Barena* of 7000 tons in July, *Andrea Gritti* of 6338 tons in September and *Rialto* of 6000 tons and *Zena* of 5000 tons in October.

While claims for shipping sunk and damaged were inevitably somewhat inflated, Italian records indicate that the Swordfish of 830 NAS sank at least 85,000 tons of Axis shipping in 1941 – an astonishing success rate for a single unit operating in very difficult conditions.

Shore-based Swordfish patrolling the Strait of Gibraltar became a fixture of the theatre for two years from late 1940. The first of these aircraft were actually operated by the RAF. *The Naval Staff History for the Mediterranean* noted that 'For regular purposes of anti-submarine patrols the Flag Officer, North Atlantic, had at his disposal in December 1940 a small force of anti-submarine trawlers, six London flying boats of No 202 Sqn, RAF, and three RAF Swordfish floatplanes'. The latter, assigned to No 202 Sqn's B Flight, began operations on 28 October 1940 with a search for French shipping.

The Swordfish typically carried out patrol flights of three to five hours' duration nearer to Gibraltar, including the Strait, to free up the squadron's London flying boats to range further. Another benefit of the Swordfish was that they could take off inside the harbour, which meant that on days that the sea was too rough to operate Londons, the Swordfish could generally fly.

It was relatively uneventful work, looking for, identifying and recording shipping in the patrol area, and sometimes searching for specific vessels. Increased tensions with the French after July 1940 meant that recording naval movements of the *Marine Nationale* gained particular weight, especially with French North Africa just on the other side of the Strait. Photographic reconnaissance of the nearer French ports was also carried out occasionally. The Swordfish helped escort British shipping, particularly Malta convoys when they passed through the Strait zone, and carried out anti-submarine patrols. Occasionally attacks were made on suspected enemy submarines, but this was speculative – crews bombed bubbles or oil on the surface more in hope than expectation. The floatplanes were sometimes put to work towing drogues for anti-aircraft batteries to fire at, as the Swordfish could be easily adapted for target-towing.

On the morning of 28 January 1941, B Flight's Swordfish complement was reduced to two when L2808 crashed into the harbour boom while taking off in darkness. The airframe was shipped home for repair.

Bad weather coming in off the Atlantic periodically caused flying to be curtailed, and in April 1941, L9770 was damaged when No 202 Sqn's Bessonneau hangar blew down in a gale. Once again, the damage was not repairable in situ, so the aircraft was shipped home, leaving K8354 as the only serviceable aircraft. On the 26th, it helped search for a missing Wellington, and later that day relieved one of the squadron's Londons after a U-boat had been contacted, but nothing further was seen.

Uneventful patrols were punctuated by the sighting of ten open boats with nine to twelve people aboard off Cape Spartel, on the Moroccan coast, on 12 April, and target-towing flights on the 14th and 15th. The Swordfish searched for two missing Wellingtons in May, and on 7 June was sent to look for one of No 202 Sqn's Catalinas, which had reported that it might have to ditch, before the aircraft reappeared safe. K8354's last operational flights were just 48 hours later when it flew two patrols, the first cut short due to bad weather, the second uneventful, marking the end of B Flight's Swordfish operations.

After the loss of *Ark Royal* in November 1941, the Admiralty decided to retain the carrier's surviving Swordfish, which had been pooled into 812 NAS, at North Front to carry on the work that No 202 Sqn's aircraft had previously done. 'One result of the sinking of the *Ark Royal*, which may be regarded as a partial set off to her tragic loss', wrote the Naval Staff, 'was the transference of Fleet Air Arm Squadron 812 of Swordfish aircraft to Gibraltar. These aircraft, equipped as they are with ASV apparatus and the excellent vision given to the pilot by the open cockpit, were an invaluable reinforcement to the anti-submarine air patrols in Gibraltar Strait'.

Nine Swordfish were available, four of them fitted with ASV Mk II radar. Lt Cdr G A L Woods, commanding officer of 812 NAS, described the unit's operations as follows;

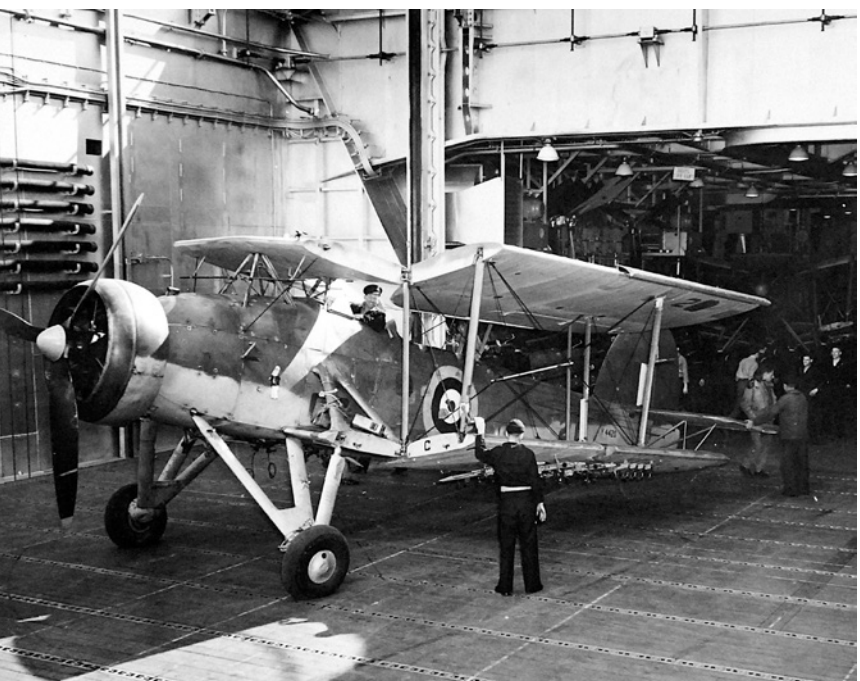
'On the night of the 27th November, 1941, the squadron started the operation of maintaining a continuous A/S [anti-submarine] patrol of one aircraft from 1900 to 0900 [hrs]. The area normally covered was a semi-circle with radius 15 miles to the west of Cape Spartel. An alternative area to the east of Almena Point was occasionally ordered. The time on patrol for each crew was two hours.'

Woods added that ASV 'led to the first submarine attack on the 30th November, 1941, and has undoubtedly proved invaluable'. The radar system was capable of detecting a surfaced submarine at a distance of up to six-and-a-half miles away.

The first attack did not result in success, but the signs were promising. In late December, convoy HG 76 set out from Gibraltar. Initially, it was suggested that three of 812 NAS's Swordfish be embarked on HMS *Audacity*, the Royal Navy's first escort carrier, for enhanced anti-submarine protection as the vessel only carried Martlet fighters. This was not possible, however, due to the shortage of available crews, forcing the squadron to cover the convoy from shore as it departed.

On the night of 14–15 December, a Swordfish detected a submarine on course to intercept the convoy. It was attacked and possibly damaged, and almost certainly prevented from engaging with convoy HG 76. The same aircraft spotted a second submarine on the return to North Front and reported it, but had no depth charges left to attack with. Another submarine was attacked the following morning, again with uncertain results.

Later that month, on 21 December, a Swordfish patrolling the Strait of Gibraltar spotted and attacked *U-451* – a depth charge detonated under the submarine's bow, sinking it almost immediately, with only a single survivor. As this action proved, the defences at the Strait were now so



V4420 2C of 812 NAS aboard USS *Wasp* (CV-7) in May 1942, on which the unit returned home from the Mediterranean after a long spell as a shore-based anti-submarine squadron at Gibraltar (*NHHC*)

effective that it was deemed too dangerous to try to send U-boats into the Mediterranean. The ASV-equipped Swordfish were effective at detecting surfaced submarines attempting to pass through the Strait under the cover of darkness.

At the other end of the Mediterranean, 815 NAS was also making a name for itself as a shore-based unit. As with 812 NAS and *Ark Royal*, the 1941 incarnation of 815 NAS was a distillation of *Illustrious*' surviving Swordfish and their personnel following the severe damage it had suffered in January 1941. The unit was provisionally reformed at Hal Far on 14 January 1941 with 12 complete crews and three spare pilots. The serviceable aircraft were flown to Heraklion, Crete, on the 17th in a 'boring 4½ hours trip in pretty terrible weather', then on to Dekheila, in Egypt, two days later. The remaining squadron personnel travelled by sea and got there ahead of the aircraft. On 21 January, 815 NAS was formally reformed under Lt Cdr J deF Jago.

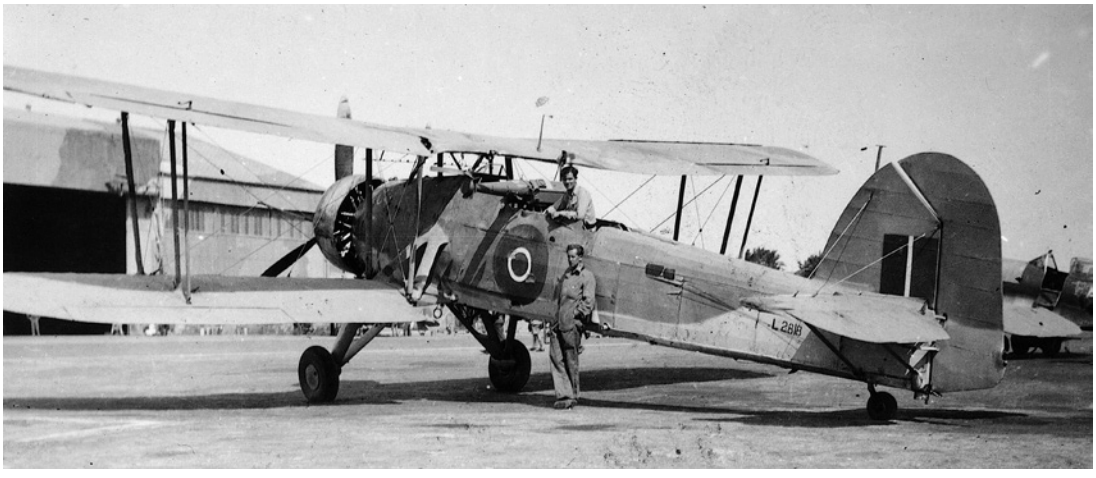
The Swordfish were repainted in desert camouflage, with detachments sent to Maleme and various landing grounds in the Western Desert. Anti-submarine patrols began at the end of January, with the occasional sweep with torpedo-armed aircraft against Axis shipping and anti-submarine escort to Allied convoys. 815 NAS was concentrated at Maleme in mid-February, from where the unit carried out mainly anti-submarine patrols with occasional shipping sweeps and bombing raids on targets in the Dodecanese islands.

In March, a detachment flew to Eleusis for operations in Greece, staging from Paramythia near the Albanian border. Amongst the missions flown from here were attacks on shipping in Valona (Vlorë) and Durazzo (Durrës) harbours on Albania's Adriatic coast. During one such operation, Lt Cdr Jago was lost, after which Lt F M A Torrens-Spence took over. In March 815 NAS sank the torpedo boat *Andromeda*, the steamer *Santa Maria* and the hospital ship *Po.*

The Eleusis contingent returned to Maleme on 28 March to ensure as many aircraft as possible could take part in the Battle of Cape Matapan (see Chapter 3), before heading back to Greece to make further torpedo attacks on shipping in Durazzo, Valona and Brindisi in April. Numerous ships were claimed sunk during this campaign, including the 9000-ton liner *Stampalia*.

The squadron had withdrawn from Greece by 21 April, and the following day it transferred to Dekheila, making further anti-shipping attacks on Beirut harbour during the Allied attack on Syria and Lebanon. Both countries were governed by France under a League of Nations mandate, but French authorities allowed Axis aircraft to operate from Syrian airfields in support of the pro-Axis coup in Iraq (see Chapter 6), which gave the Allies justification to invade. Operations took place from Nicosia, on Cyprus, alongside two squadrons displaced from *Formidable* that still flew a few Swordfish in addition to their Albacores. From here, they carried out armed reconnaissance against French blockade runners, sinking one and ending the attempt to defeat the blockade.

On 16 June, a flight of six Swordfish from 815 NAS encountered the French destroyer *Chevalier Paul* while on a shipping sweep, and Sub-Lt D A Wise torpedoed it amidships, which the squadron diary considered



Fitted with a target-towing winch in its centre cockpit, Swordfish L2818 of 815 NAS is seen at Fayid, in Egypt, in August–September 1942. The winch was easily fitted and removed, and the target that was towed by it was useful for keeping Royal Navy gunners in practice between operations (*Author's Collection*)

to be 'a very good shot considering the ship was travelling at anything up to 40 knots'. The destroyer sank the next morning. Lt G W Clifford was shot down, but he and his Observer, Sub-Lt P Winter, were recovered by French destroyers picking up survivors from *Chevalier Paul*.

In the autumn, Albacores began to gradually supplant the Swordfish at 815 NAS. Both types operated together for a time during the Libyan campaign, when the Albacores focused on strike while the Swordfish, now equipped with ASV, tackled anti-submarine and convoy protection work. One of its Swordfish attacked *U-652* in concert with an RAF Blenheim off Sollum on 2 June 1942, leaving the U-boat so badly damaged that it had to be sunk later that day by *U-81*. A pair of Swordfish was retained for this duty until the squadron disbanded in 1943.

In the Western Desert, 826 NAS replaced the last of its Swordfish in September. Another Swordfish unit, 821 NAS, turned up in-theatre in the spring of 1942, only to find that it was not expected and there were no aircraft available. Eventually, Albacores were taken on instead. However, the squadron's aircrew were 'borrowed' to ferry six Swordfish and a similar number of Albacores to Malta for 830 NAS in May. It was a laborious and dangerous process, as Lt I G Templer recalled;

'We went in pairs. Each pair had to wait until the previous one had either got there or hadn't got there, and the weather forecast was good, because you'd got to take off, finally, from an advance landing ground, El Adem, where there were practically no facilities for hanging about, so you had to go pretty well straight through. Anyway, there was one Albacore lost. They [Swordfish and Albacores] had an extra fuel tank in the Observer's seat, and at El Adem they had to be filled by hand. And of course they topped them up until they overflowed, so you'd got a hell of a smell of petrol in the back cockpit.

'One of the things we were all told was that we needed to get in W/T touch with Malta at the earliest opportunity. Now one of the Albacores was seen to go down in flames. And if it wasn't a nightfighter, we thought probably what had happened was that the Observer tried to use the radio before the petrol fumes had gone, and there was a spark and that was it. And we lost a Swordfish doing that as well.'

The last pair of Swordfish arrived safely. However, before Templer left, 'those two aircraft collided on the ground in the middle of an air raid two nights later. Fortunately, there were no injuries, but both aircraft were written off. Three weeks later, they'd built one new aeroplane out of those two. But all that effort, cost, expense and organisation could be written off just like that.'

These were the last two Swordfish received by 830 NAS. It was effectively merged with 828 NAS by the end of 1942 and disbanded formally in March 1943. The two squadrons are believed to have sunk 30 enemy ships and damaged another 50, having a material effect on the Axis' ability to supply its armies in North Africa.

After the *Torch* invasion of French North Africa in November 1942, 813 NAS transferred from Gibraltar to Tafaraoui to provide convoy protection and anti-submarine patrols. Between Tafaraoui and the sea were the Atlas Mountains. According to Observer Lt A Inman, the squadron's Swordfish 'were getting very old and would not go very high, so getting out to sea past the coastal mountains meant finding a pass low enough for our aircraft to progress. Luckily there was such a pass quite handy'. Detachments began flying coastal patrols from Blida and Bône, also in Algeria, shortly thereafter.

On 19 November, Vice-Admiral Cunningham wrote to the Admiralty with an impassioned call for more air support as the line was being held almost entirely by 813 NAS's Swordfish. 'It may not perhaps be realised that we have at present no, repeat, no anti-ship striking force at all except one of six Swordfish at Algiers. We are feeling this lack of an air striking force very seriously at this moment, with the Axis running supplies at this critical moment into Tunisia by day by sea virtually unhindered'.

813 NAS returned to Gibraltar in March 1943, and seven months later it transferred to Britain and was disbanded.

A Royal Navy aircraft repair facility in Egypt with two Swordfish Mk IIs in the middle, an Albacore to the rear and the wing of a Fulmar in the foreground (*Author's Collection*)

CHAPTER SIX

EAST OF SUEZ

Swordfish from 831 NAS patrol over the Indian Ocean near *Indomitable*, which took part in Operation *Ironclad* against Madagascar in May 1942 (*Author's Collection*)

Swordfish attached to carriers usually operating in the Mediterranean and Atlantic undertook a number of operations around the east coast of Africa from the Red Sea to Madagascar, and even into the Persian Gulf, in 1941. Although these were peripheral to the main theatres, they were no less important for that. Later, when Japan entered the war, Swordfish clung on as fleet torpedo-bombers but saw little combat in that region. The few Swordfish to face this new enemy were mostly RAF-operated second-line aircraft caught in the fury of the initial Japanese campaign. The Swordfish would enjoy one final hurrah in the assault on Madagascar.

In February 1941, *Hermes* took part in Operation *Canvas*, which aimed to capture Kismayu, in Somaliland, from Italian forces and prevent enemy merchant vessels from escaping. A planned operation to dive-bomb merchant ships was cancelled as the Admiralty preferred to capture enemy shipping for future use. The Swordfish of 814 NAS carried out reconnaissance to locate fleeing merchant ships and direct a cruiser or destroyer to intercept them, and a number of vessels were apprehended this way. One small German ship refused to surrender, however, resulting in it being bombed. By the 16th, Kismayu had fallen, and *Hermes* left the area with the heavy cruiser HMS *Hawkins* to sweep towards Mombasa, in Kenya. *Canvas* was successfully concluded by the end of the month, so *Hermes* departed for Ceylon.

At the end of March, *Eagle*'s Swordfish squadrons, 813 and 824 NASs, disembarked and flew to Port Sudan to assist in the East African campaign, where British Empire forces were fighting to dislodge the Italians from the region. A small but dangerous *Regia Marina* flotilla based at Massawa, in Eritrea, was active in the Red Sea, threatening Allied shipping using the Suez Canal.

The flotilla's commanding officer was determined that the flotilla would make a final attack on Allied forces. On the first attempt, the destroyer *Leone* hit a reef and had to be scuttled, reducing the force to five. On 2 April, the Swordfish squadrons were alerted by RAF reconnaissance that the destroyers at Massawa were raising steam again. A strike force was launched, armed with 250-lb bombs, and although the aircraft found the destroyers two hours after they had sailed, the Swordfish failed to score any hits. During the night, *Cesare Battista* was unable to maintain more than 15 knots so it detached, reducing the force to four.

Regia Marina destroyer *Leone* passes through the Suez Canal. This destroyer and its sisters *Tigre* and *Pantera* were part of the Red Sea Flotilla which was attacked by Swordfish from *Eagle* in the Red Sea on 2 April 1941. *Leone* hit a reef and had to be scuttled, and the following day *Tigre* and *Pantera* were bombed and then abandoned in Saudi Arabian waters (*Author's Collection*)

Early the following morning, Cdr Keighly-Peach flew a reconnaissance mission and spotted the remaining destroyers – *Nazario Sauro, Daniele Manin, Tigre* and *Pantera* – now just 30 miles from Port Sudan. Another strike was launched, and the Swordfish caught up with the ships when they were less than 20 miles from their target. This time, they managed to succeed, scoring hits on *Nazario Sauro*, which sank in a few minutes, and *Manin*, disabling it and forcing the crew to abandon ship. *Tigre* and *Pantera* were damaged by splinters from near misses but remained operational.

Nevertheless, an attack on Port Sudan was now impossible. The two destroyers made for Saudi Arabian waters, where they were abandoned, and later sunk by the destroyer HMS *Kingston*, which awarded *Pantera*'s ensign to *Eagle* in recognition of its aircraft's role in the victory. Shortly after this, *Eagle* sailed through the Suez Canal for a cruise in the South Atlantic before returning to Britain, where it arrived at the end of October.

Hermes, meanwhile, with 814 NAS embarked, sailed from Ceylon to the Persian Gulf, where British Empire forces were fighting the pro-Axis uprising in Iraq. The carrier arrived in the Gulf on 29 April and patrolled for several days with six Swordfish ranged, armed with anti-personnel bombs, to support forces ashore if required and to carry out demonstration flights. On 4 May, six aircraft staged to Shaibah, in Iraq, from where they attacked a railway bridge at Samawa, some 180 miles away.

It was apparent that the aircraft at readiness would be better able to respond to requests from ground forces if they disembarked to Shaibah. A detachment of three aircraft with a maintenance party was duly flown ashore on 6 May, being placed under Air Officer Commanding (AOC) Iraq three days later. This force was subsequently increased to six and then eight aircraft.

The Swordfish carried out reconnaissance patrols, investigating any large gatherings. When fired upon by one such group, aircraft were sent armed with 100-lb bombs to disperse the crowd, which they achieved, with a number of casualties inflicted on the rebels. Iraqi small-arms fire proved extremely accurate, and after the first few operations it was decided that bomb release height should be no lower than 4500 ft.

On 10 May, three aircraft bombed the barracks at Nasariya, and later one aircraft covered convoy BP 2 to Basra. The barracks at Samawa was bombed the following day, and the day after that Nasariya was hit again. On the 15th, three Swordfish made another attack on Samawa barracks, but the engine in Sub-Lt W J Pooley's aircraft started to fail just after the target had been hit. He successfully force-landed and then found himself surrounded by armed Iraqis, who opened fire on him. The formation leader, Lt J H Dundas, landed his own Swordfish near the crashed aircraft and rescued the crew. Although Dundas's Swordfish received hits to the fuel tank and tailplane, all the aircrew escaped unharmed. The following day, four Swordfish bombed the oil and petrol tanks at Amara with 250-lb GP bombs.

AOC Iraq decided at this time that there would be no further attacks on barracks unless it was clear they were in enemy hands, as it was apparent that not all of the Iraqi army was pro-rebel. Following this decision, there were no worthwhile targets within range of the Swordfish at Shaibah. It was hot and dusty, and while six aircraft had been kept available whenever required, it had not been easy. After re-embarking on *Hermes*, further sorties flown included reconnaissance and air cover for a patrolling gunboat.

The Commander-in-Chief of the East Indies station, Vice-Admiral Sir R Leatham, wrote;

'I consider that much useful work was done, under difficult conditions, by disembarked aircraft from HMS *Hermes*, and although military targets of importance were outside the range of these aircraft, the bombing of the targets allotted to them by the Air Officer Commanding, Iraq, was effective and undoubtedly had good moral effect on the rebel Iraqis.'

Hermes left the Gulf on 7 June for Colombo, and in July began patrolling off the Seychelles.

Other than the occasional presence of a raider, the Indian Ocean was a quiet theatre of operations until late 1941, especially after the Red Sea ceased to be a war zone. It was bounded by British Empire and Commonwealth territories from the Cape of Good Hope in the west to Aden, India and Ceylon in the central area and Singapore to the east. There was little threat until the likelihood of Japan declaring war on the Western powers began to rise in late 1941. This threatened the vital trade route around the Cape of Good Hope, by which supplies could be brought from the colonies and Egypt supplied via the Suez Canal.

In November, *Hermes* was recalled from the Seychelles to Ceylon, and the Swordfish of 814 NAS were disembarked to Colombo for the defence of the island in the event of an assault by the Imperial Japanese Navy (IJN).

The following month, Japanese forces launched an attack on US, British and Dutch territories in the Far East. The only Swordfish in-theatre at that time were the aircraft equipping B and C Flights of No 4 AACU in Singapore and Malaya. These aircraft had been provided to the RAF by the

Royal Navy for use as target tugs, where they assisted anti-aircraft batteries and combat aircrews in gunnery training. They were of limited use to fighter squadrons, being too slow to be representative of enemy types, but there were no aircraft available that were any better.

When Japanese forces attacked Malaya on 8 December, two Swordfish were at Kuantan. They were ordered to withdraw to Singapore the following day, and were just taking off when Japanese aircraft appeared and started strafing the airfield. They escaped harm and reached Tengah successfully, although some examples were destroyed on the ground shortly afterwards. Other Swordfish were destroyed or damaged on the ground in ones and twos over the succeeding days.

Four Swordfish were subsequently reassembled from wrecked and unserviceable aircraft by No 151 Maintenance Unit. On 31 January 1942, these were earmarked for the army to spot the fall of shot of the coastal gun batteries, alongside two Shark biplanes. Their last operation was the Swordfish's only bombing attack of the defence of Singapore, when all four aircraft bombed Kluang airfield and a nearby railway line. They unloaded a few bombs on the targets and then returned to Tengah, where they were arranged on the airfield as dummy aircraft, all four being destroyed early on 9 February by enemy fighters in strafing passes.

The Swordfish of 814 NAS re-embarked that month when *Hermes* was ordered to sail to Australia, but this cruise was cancelled and the aircraft returned to shore bases.

Recently promoted Admiral Somerville, the former commanding officer of Force H, arrived at Ceylon in March 1942 to become Commander-in-Chief, Eastern Fleet. The latter was strong on paper, with the modern carriers *Formidable* and its newer half-sister HMS *Indomitable*, in addition to *Hermes*, four old R-class battleships and seven cruisers, in addition to light forces. However, Somerville was aware that in a straightforward confrontation, his forces were no match for the IJN, which had five fleet carriers equipped with modern aircraft in significantly greater numbers than the FAA strength. Somerville's two modern carriers were mostly equipped with Albacores, but 831 NAS on *Indomitable* still had a few Swordfish. Only *Hermes*' 814 NAS was still entirely equipped with Swordfish.

The IJN sailed west from Sulawesi, in the recently captured Netherlands East Indies, in late March. To the Admiralty's displeasure, Somerville instituted a defensive policy, aiming to keep the Eastern Fleet out of range of the IJN during daylight in the hope of being able to close during the night and attack in darkness with his biplane torpedo-bombers. In explanation of this stance, he wrote 'the unattractive policy you refer to is forced on me by the very unattractive aircraft with which my carriers are equipped. I may be forced to make a daylight strike, but I shall avoid if possible subjecting my slow Albacores and Swordfish to so unequal a contest'.

Hermes' 814 NAS was still ashore when the IJN was detected approaching Ceylon in early April. Six Swordfish were transferring from China Bay to Ratmalana to mount a torpedo strike on the enemy force on 5 April when they were caught by the first wave of attacking aircraft. All were shot down. Along with all other ships in port at Ceylon, *Hermes* was ordered to escape to

Onboard *Illustrious* on 5 May 1942, as Swordfish were spotted for take-off on the day of Operation *Ironclad*, V4447 2L of 810 NAS struck an anti-aircraft gun and crashed into Martlet BJ559 (*Author's Collection*)

the south, but it was discovered and sunk by dive-bombers on 9 April. The IJN force soon withdrew, and the surviving Swordfish, with no parent carrier, remained at Ceylon, from where they conducted patrol flights until the squadron was disbanded later in the year.

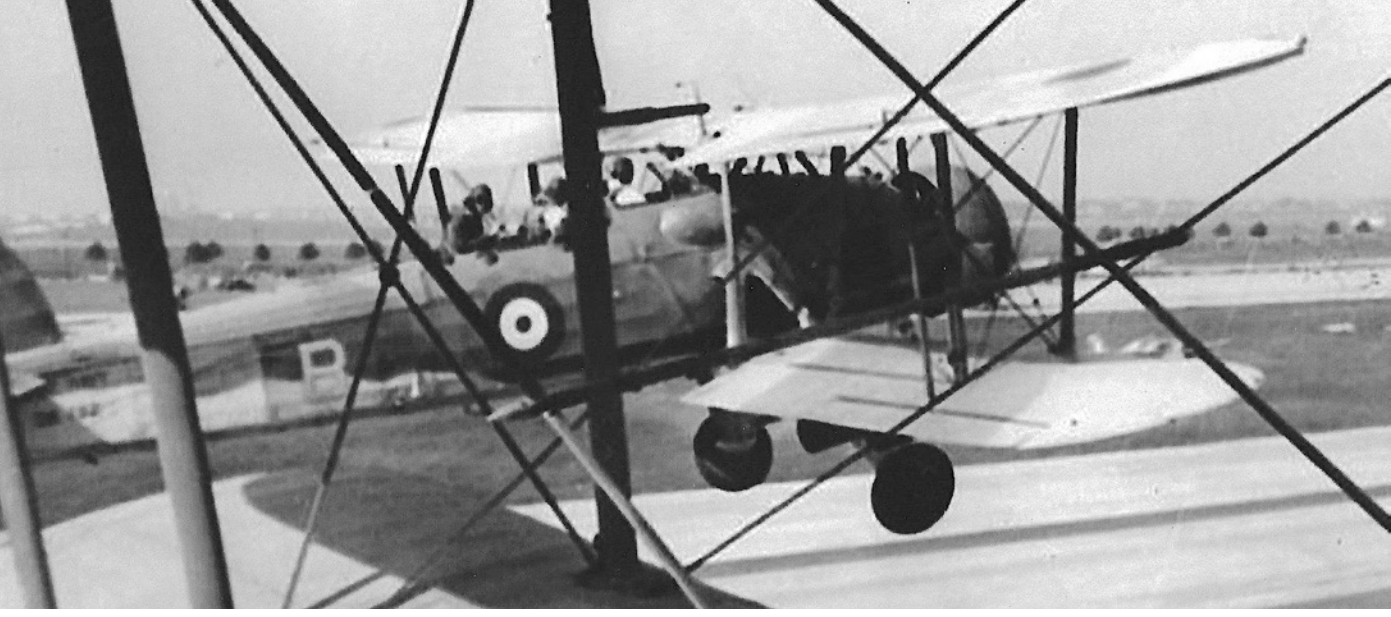
While the IJN withdrew from the Indian Ocean after the attack on Ceylon, the Royal Navy took steps to ensure that it could not establish a permanent base there. The possibility of Japanese submarines operating in the region was a serious concern, and a likely location was the island of Madagascar, which was well located and had several suitable ports. Madagascar was a French 'protectorate' at the time, so the subsequent actions represented part of the ongoing pseudo-war against the nominally neutral Vichy French regime.

Operation *Ironclad* was instituted in April to take control of the port of Diego Suarez, followed by the rest of the island. The task force was to include *Illustrious*, on its first operation since the heavy damage sustained in January 1941. In the carrier's air group were Swordfish of 810 and 829 NASs, which had first embarked in March. *Indomitable* joined the invasion task force, while *Formidable* remained with the Eastern Fleet, providing distant cover in case of an intervention by the IJN.

The task group arrived on 4 May and *Illustrious* flew off a strike made up of 18 Swordfish from both of its squadrons the following day. The aircraft were armed with a mix of bombs and torpedoes, and their targets were any warships in Diego Suarez Bay. They achieved total surprise and sank the auxiliary cruiser *Bougainville* and the submarine *Bévéziers* and attempted to torpedo the sloop *D'Entrecasteaux*, although the weapons were set to too great a depth. The sloop was sunk with bombs the following day and the submarine *Héros* was depth-charged and sunk on 7 May.

Unidentified Swordfish 2E or 2F of 810 NAS ran into the port catwalk of *Illustrious* around the time of the Madagascar operations in May–June 1942 (*Author's Collection*)

Thereafter, the major occupation for *Illustrious*' Swordfish was anti-submarine patrols. It remained in the region until January 1943, and was then recalled to the Home Fleet to cover *Indomitable* being taken out of service for complete upgrade of its radar. On the voyage home 829 NAS was absorbed into 810 NAS, and shortly after returning to Britain the combined unit converted to the new Barracuda monoplane. This represented the end of the Swordfish's role as a fleet strike aircraft. There was, however, plenty more life left in the 'old dog'.



DK782 B of 834 NAS takes off in formation with another Swordfish from NAS New York (Floyd Bennett Field) when the unit was based there in August 1942 while awaiting rectification of *Archer*'s engine woes (*Author's Collection*)

CHAPTER SEVEN

CONVOY ESCORT

By the second half of 1940, it was clear to the Admiralty that the war was not taking the course expected or planned for. The Royal Navy's fleet carriers were heavily engaged on a number of tasks, and the protection of trade routes was low on the list of immediate priorities. Nevertheless, the threat to Britain's vital supply lines from U-boats, supported by long-range aircraft, auxiliary cruisers and surface raiders, was potentially existential.

The experience of the first months of the war was that the Royal Navy had vastly overestimated the effectiveness of its existing ASDIC in detecting submarines. Aerial anti-submarine cover for convoys was badly needed, but fleet carriers were too busy, too scarce and too valuable to accompany them, and long-range shore-based aircraft could not cover the entirety of the Atlantic.

The Admiralty began considering ways for aircraft to operate over convoys in late 1940, and although the initial impetus was fighter protection against Fw 200 Condor maritime patrol bombers, attention soon turned to anti-submarine warfare too. Adding a flightdeck to a merchant ship hull to produce a small aircraft carrier capable of operating with a convoy was proposed in December, and the following month steel was cut for the first auxiliary carrier, *Audacity*.

The vessel carried only Martlet fighters, although consideration was given to adding a few Swordfish just before it was sunk in December

Torpedo-armed Swordfish Mk II HS227 5A of 835 NAS is brought up on HMS *Battler*'s lift prior to being ranged on deck during the escort carrier's work-up cruise in April 1943. Built by Blackburn, this aircraft had been delivered to the unit two months prior to this photograph being taken (*Author's Collection*)

Wings folded forward and locked in place, HS227 is pushed aft over the arrestor wires for spotting on *Battler*'s stern. The Yagi antennas on the forward outboard wing struts associated with the aircraft's then top-secret ASV radar system have been crudely censored out (*Author's Collection*)

1941. More ships like *Audacity* were ordered, to be built in both US and British shipyards, and following the experience of 812 NAS at Gibraltar (see Chapter 5), the Swordfish was chosen as the anti-submarine type to equip them. The Director of Naval Air Division, Capt C Moody, opined that the Swordfish 'appears to be the most suitable TSR for auxiliary carriers', and that there was a 'great advantage to be gained by perpetuating the Swordfish'. A further 400 aircraft were therefore ordered from the Blackburn factory. This gave the aircraft, originally going out of production in September 1939, a new lease of life into 1943 and beyond. In fact, further orders of 650, later boosted to 1000, kept the Swordfish in production until the middle of 1944.

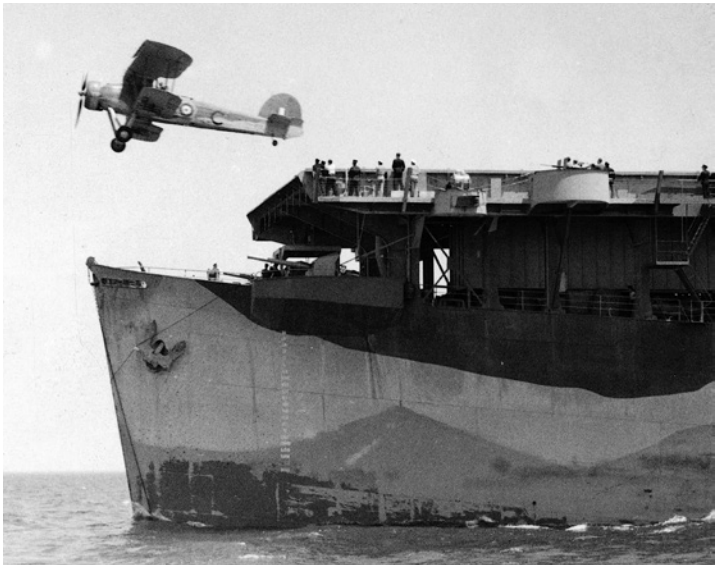
The lightly updated Swordfish Mk II also arrived from December 1941, the aircraft being fitted with a 750 hp Pegasus XXX engine. Later updates would include Rocket-Assisted Take-off Gear (RATOG) to enable higher loads to be carried in light winds, as British aircraft could not use the catapults fitted to US-built escort carriers. Also during the Mk II production run, a metal-skinned lower wing was introduced to allow the use of rocket projectiles without setting fire to the airframe. From the end of 1942, most Swordfish on convoy escort would wear the distinctive 'Atlantic' white colour scheme that provided better camouflage over the ocean.

The second British auxiliary carrier to commission, and the first of the US-built ships in Royal Navy service, was HMS *Archer* in November 1941, followed by *Avenger* in March 1942. That month, 834 NAS joined

Avenger for its shakedown cruise, although reliability problems meant the carrier was unable to accompany a convoy bound for Britain at the end of it.

Archer also suffered from long-running mechanical issues, as Lt Peter Jinks, a Swordfish TAG with 834 NAS who joined the carrier in early 1943, recalled;

'My first carrier was *Archer*, and we were constantly having engine breakdowns at sea. If the engines weren't pumping well, you could often feel your wheels go over the bow end of the flightdeck, and you'd sort of go down. Being in the back seat, I had a good view of the deck disappearing, and in fact I saw our slipstream make waves on the water – that low – 'til you'd climb.'



Swordfish C of 833 NAS takes off from *Biter* during the carrier's work-up in September 1942. Two months later, the vessel covered the Allied *Torch* landings in North Africa, with 833 NAS providing anti-submarine cover for the invasion fleet (*Author's Collection*)

Archer returned to the US for repairs and 834 NAS decamped ashore to train at Naval Air Station (NAS) New York.

Avenger sailed with convoy AT 15 in late April 1942, and the Swordfish of 816 NAS flew aboard from Jamaica on 3 May. This was followed by HMS *Biter* with 836 NAS – the carrier later embarked 833 NAS.

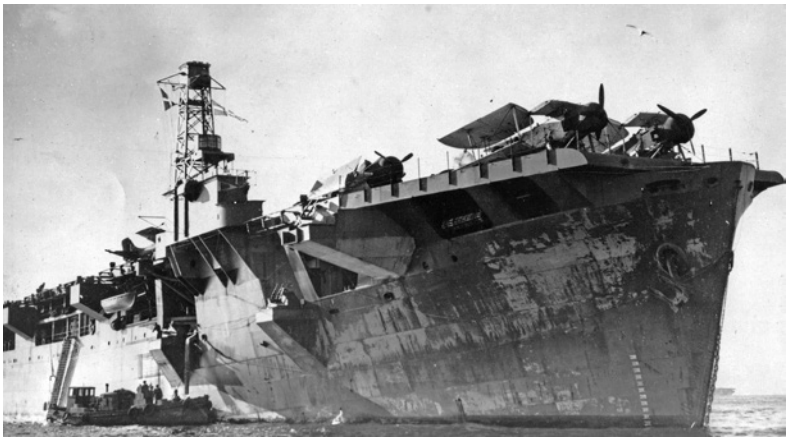
While the auxiliary carriers were getting established on the Atlantic routes, the first escort carrier on the Arctic convoys sailed with convoy PQ 18 in September 1942. *Avenger* carried mostly Sea Hurricanes, reflecting the threat from Luftwaffe aircraft based in Norway, but there were also three Swordfish Mk IIs of 825 NAS aboard. On 13 September, a Swordfish sank *U-589* in concert with a destroyer, beginning a run of successes for 825 NAS that saw the unit sink *U-653* in March 1944, *U-765* in May, *U-344* in August and *U-394* in September.

Nevertheless, the loss of 13 merchant ships during convoy PQ 18 had shown that there was much to improve. *Avenger*'s captain, former Swordfish pilot Cdr A P Colthurst, noted;

'The operation of Swordfish on anti-submarine patrols and for other work from auxiliary aircraft carriers is not satisfactory. Their take-off when heavily loaded is inadequate for a 440 ft flightdeck with a maximum speed of 16 knots and normal strengths of wind. There will be few occasions when a Swordfish force of any size can be flown off with torpedoes or a full load of depth charges.'

This made the development of RATOG and other weapons paramount. Carrier improvements

The flightdeck crew race out of HMS *Ravager*'s catwalks as a Swordfish catches a wire during deck-landing training aboard the carrier in 1943–44 (*Author's Collection*)



The second British-built escort carrier, *Activity* is seen here in 1944 with Swordfish Mk IIs of 836 NAS's F Flight ranged forward. This unit generally supplied Swordfish for MAC-ships, but a flight was also embarked in *Activity* between April–September 1944 escorting convoys to the USSR. F Flight shared the carrier's flightdeck with Wildcats of 833 NAS (*Author's Collection*)

also helped matters – from HMS *Attacker*, the seventh auxiliary carrier which was commissioned in October 1942, US-built ships were powered by steam turbine engines, giving greater speed and reliability. The new British ships, of which the first was HMS *Activity*, commissioning in September, were diesel powered and around 80 ft longer than the US-built vessels.

Convoy escort with auxiliary carriers was reduced in late 1942 due to the pressures of the North African landings, and then by the tragic loss of *Avenger* to *U-155* west of Gibraltar while returning from *Torch* on 15 November and HMS *Dasher* to an unexplained explosion in the Clyde on 27 March 1943. A programme of modification to make the ships safer delayed their widespread use.

In February 1943, *Biter* pioneered a new squadron arrangement with a single heterogeneous unit operating both TSRs and fighters – 811 NAS would encompass both Swordfish and Martlets (known by the US name of Wildcat from 1944). This simplified administrative issues and promoted closer working between aircrews. *Biter* also experimented with acting as an independent unit, with its destroyer escort giving distant cover to the convoy – a prototype of the later hunter-killer group.

In May, *Archer* sailed with the Swordfish of 819 NAS embarked, the aircraft equipped with rocket projectiles for the first time. This proved timely, as *Biter*'s Swordfish discovered on the return convoy from Halifax. U-boats had developed a new tactic of remaining surfaced while under attack and returning fire with 20 mm cannon, as this made them less vulnerable to depth charges. The rocket projectile was potent against a U-boat on the surface, and Swordfish began to carry a mix of depth charges and rockets to cover all eventualities, while fighters assisted by strafing the submarines to suppress the anti-aircraft fire.

It was proving difficult to sink submarines, especially with increased defences such as heavier anti-aircraft guns and radar detecting technology, but the Swordfish were also making it far more difficult for U-boats to

In 1943, squadrons for escort carriers began to adopt a mixed fighter–TSR complement with Swordfish plus Martlets or Sea Hurricanes, as seen here. Units with this makeup included 835 NAS from June and 825 NAS from September (*Author's Collection*)

attack convoys. Lt Peter Jinks, a veteran of 819 NAS's spell with *Archer*, explained;

'Two-and-a-half-hour patrols with depth charges kept the submarines out of the way. The fact that we were there kept them away – they would submerge out of the way. People say "Did you ever see a submarine?" Well, no I didn't! But we never lost a ship from our convoy either.'

There were successes, nevertheless. On 23 May a Swordfish from 819 NAS surprised *U-752* in heavy Atlantic seas by diving out of cloud cover and attacking with rockets. The squadron diary remarked, 'The submarine sunk by [aircraft] "B" caught fire aft and suffered severe damage to its steering gear during the Rocket Attack. The crew appeared to be dumbfounded by the new weapon'.

Swordfish Mk II LS298 of Free Dutch 860 NAS leads a flight of three aircraft from MV *Macoma* – one of nine Anglo-Saxon Royal Dutch/Shell oil tankers that were converted into MAC-ships in 1943–44. Delivered to 860 NAS in November 1943, LS298 was christened *Toevallig* (*Collection of the Netherlands Institute for Military History*)

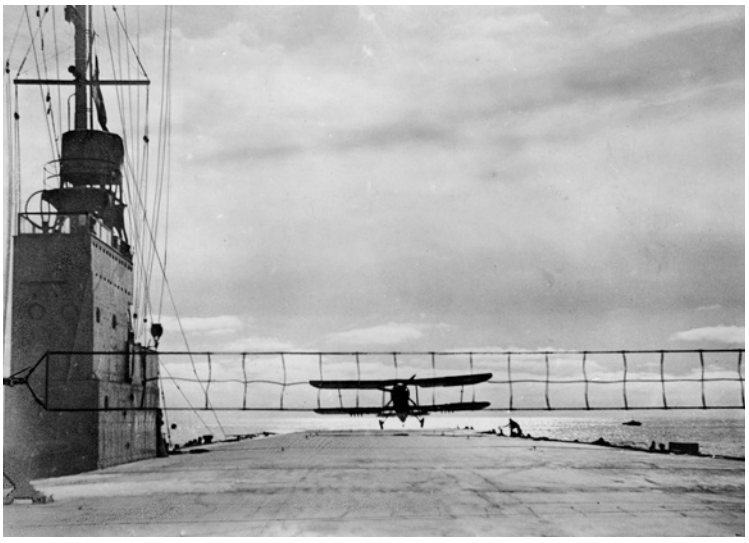
Also in April 1943 the first Merchant Aircraft Carrier, or MAC-ship, arrived. These were functioning merchant ships, grain carriers or oil tankers operated by merchant seamen but with a flightdeck and provision for a small number of Swordfish. The flightdecks fitted to these vessels were shorter than those of the auxiliary carriers, a mere 414–424 ft long and 62 ft wide – just 16 ft 6 in wider than the wingspan of a Swordfish. A special fine-pitch propeller was provided to permit Swordfish to take-off in lighter wind. As *Empire Macalpine* found on its first convoy, HS 425, the loaded grain ship had a steadier motion than an auxiliary carrier, meaning it could operate aircraft when HMS *Chaser* could not. Pool unit 836 NAS was set up to provide four-aircraft flights to MAC-ships, while Free Dutch 860 NAS did the same for two Dutch-manned vessels.

Operating from the tiny carriers in the mid-Atlantic was no easy business, as Sub-Lt B E Ryley, an Observer with 836 NAS's H Flight, recalled;

'Day flights would extend into night flights if you got lost, which happened on one occasion. In fact we had one or two pilots who got lost, and the pilot of a previous crew to us decided to head off for Iceland instead of trying to find the ship and unfortunately they were lost at sea. And on another occasion I saw one of our Swordfish make a perfect landing on the MAC-ship, and the next moment the ship gave a roll and they were all in the sea.'

Once MAC-ships were available on the Atlantic run, auxiliary carriers

A radar-equipped Swordfish Mk II from Free Dutch 860 NAS makes a slow pass down MV *Macoma*'s starboard side as the MAC-ship sails off the west coast of Ireland in 1944. A solitary aircraft from the unit is also spotted forward on the carrier's modestly proportioned flightdeck. Typically, just four Swordfish were operated from MAC-ships like this, with 860 NAS providing two flights for a pair of Dutch-manned vessels (*Collection of the Netherlands Institute for Military History*)



A rocket-armed Swordfish receives the 'cut' from the batsman as it touches down on a MAC-ship in late 1944. The maximum beam of a typical vessel of this type was only 16 ft wider than the Swordfish's wingspan (*Author's Collection*)

could be diverted elsewhere. In July 1943, *Archer* with 819 NAS was assigned to B5 Escort Group, a hunting group intended to intercept U-boats as they crossed the Bay of Biscay en route to their operating areas. Other innovations included the US-developed Mk 24 acoustic homing torpedo known as FIDO and ASV Mk XI radar, which was capable of far greater precision than the earlier Mk II. Swordfish with the new radar were delivered from February 1944, designated Mk III.

Even with the new technology, the Swordfish's low performance was becoming a problem. The aircraft had a kill success rate of just 17 per cent following a U-boat sighting, whereas for *Avenger*s in US Navy service, the figure was 38 per cent. Nevertheless, Swordfish were more widely available and still required. The last surge of Arctic convoys began in February 1944 with JW 57, which included *Chaser* with 816 NAS aboard. On 4 March, during the homeward voyage through the Barents Sea, a Swordfish attacked *U-472* with rockets and shared in its destruction with the destroyer HMS *Onslaught*. *Activity* accompanied JW 58 that same month with three Swordfish from 819 NAS embarked. On 3 April, again in the Barents Sea, one of the 819 NAS aircraft sank *U-288* in concert with an Avenger and a Wildcat of 846 NAS from HMS *Tracker*.

New auxiliary carriers entered service with the Royal Navy as late as June 1944, with Swordfish forming part of their air group – HMS *Campania*, which arrived that month, had among its 813 NAS aircraft the very last of 2392 Swordfish constructed, Mk III NS204. At the end of February 1945, 813 NAS left *Campania*, replaced by 825 NAS, with which it escorted convoys JW 65/RA 65 – the carrier's last.

Swordfish Mk IIs under construction at Blackburn's factory at Sherburn in Elmet, then in the West Riding of Yorkshire. In late 1942, the mainly white 'Atlantic' scheme seen here was adopted for new aircraft operating from escort carriers in northern latitudes (*Author's Collection*)

A Swordfish Mk III running up at a shore base in 1944, fitted with rocket rails and Light Series carriers under the wings, demonstrating the large ASV Mk XI in the ventral radome and a flame-damping 'hedgehog' exhaust (*Author's Collection*)

CHAPTER EIGHT

HOME WATERS

The expansion of the FAA was proceeding apace by early 1941, but the Royal Navy was struggling to accommodate all of its squadrons at sea. By the end of May 1941, two fleet carriers had been sunk and another two so severely damaged that they would be out of action until well into the following year. At the same time, the lack of resources allocated to RAF Coastal Command meant that there was a ready place for new or existing TSR squadrons flying from shore bases over home waters.

A stalwart of these operations was 816 NAS, which after the Norwegian campaign had already spent most of its war ashore. In March 1941, the unit was assigned to No 16 Group of RAF Coastal Command for operations over the North Sea and the English Channel. A detachment went to North Coates to patrol off the Dutch coast. Another group of three Swordfish went to Detling, in Kent, to provide defence for the veteran monitor HMS *Erebus* against enemy destroyers and S-boats during its night bombardments of Channel ports. By the end of May, the nights had become too short for the slow monitor (its top speed was just 12 knots) to sail from Chatham, carry out its bombardment and reach the safety of port again before daylight. The Detling Swordfish were therefore employed on occasional night bombing raids.

Sub-Lt Lt I G Templer joined 816 NAS during this period, and he recalled, 'My first operation was to Boulogne – I dropped four 250 pounders. And then we did another one to Ostend'. There were other

Swordfish Mk II DK694 A of 816 NAS over the Channel during a period when the unit was based ashore at RAF Thorney Island and under the control of RAF Coastal Command's No 16 Group (*Author's Collection*)

raids on Calais and Dunkirk. He noted that 'our three Swordfish were pretty old. In fact one of them wouldn't go [above] more than about 5000 ft, and the CO [Lt Cdr T G C Jameson] always used to fly that if we were on a raid. So then we started getting new aircraft, and in mid-July we were moved to the Orkneys and reformed as 821 NAS with six aircraft'.

The remainder of 816 NAS re-embarked aboard *Furious*, which then became heavily involved in operations ferrying aircraft to Malta, while the new 821 NAS was relocated to Hatston on the basis of new fears of a breakout by the Kriegsmarine's capital ships.

Templer explained that 'we trained, and trained, and trained and trained, and then formed up as a squadron when we received some new Swordfish equipped with what was then called ASV and subsequently became known as radar. With ASV you could fly blind, find a target and dive down through the clouds and attack it. So we did a lot of training along those lines'.

In the end, the anticipated threat from the Kriegsmarine did not materialise, and in November 1941 821 NAS was transferred to the Middle East (see Chapter 5). Indeed, by early 1942, the chief risk was realised to be that the battlecruisers *Scharnhorst* and *Gneisenau* would attempt to sail back to Germany from their base on the French Atlantic coast. A large and complex plan, codenamed Operation *Fuller*, was put into place to deal with such an event. The FAA's role in this was tiny compared with the many RAF squadrons and Royal Navy units allocated – just six ASV-equipped Swordfish of the reformed 825 NAS under Lt Cdr E Esmonde, detached to RAF Manston, in Kent, in the event that the warships passed through the English Channel at night.

The battlecruisers, with a strong escort of smaller warships, left Brest late on 11 February and made for the English Channel. Due to a series of misfortunes and mistakes, however, the vessels reached Cherbourg before the RAF realised, and none of the assembled aircraft or ships allocated to *Fuller* were able to intercept them. By midday on the 12th, the warships were close to passing through the Strait of Dover, and the only aircraft in position to attack were the six Swordfish of 825 NAS.

If the aircraft were to have any chance whatsoever of reaching *Scharnhorst* and *Gneisenau* in daylight, they would need substantial fighter support, for the warships were covered by a dense fighter umbrella from France. Unfortunately, only ten Spitfires arrived to protect the Swordfish. With time running out, Esmonde set off with his six aircraft in two sub-flights, having hastily told his crews to 'fly at 50 ft, loose line astern, individual attacks and find your own way home. We shall have fighter protection'. Around

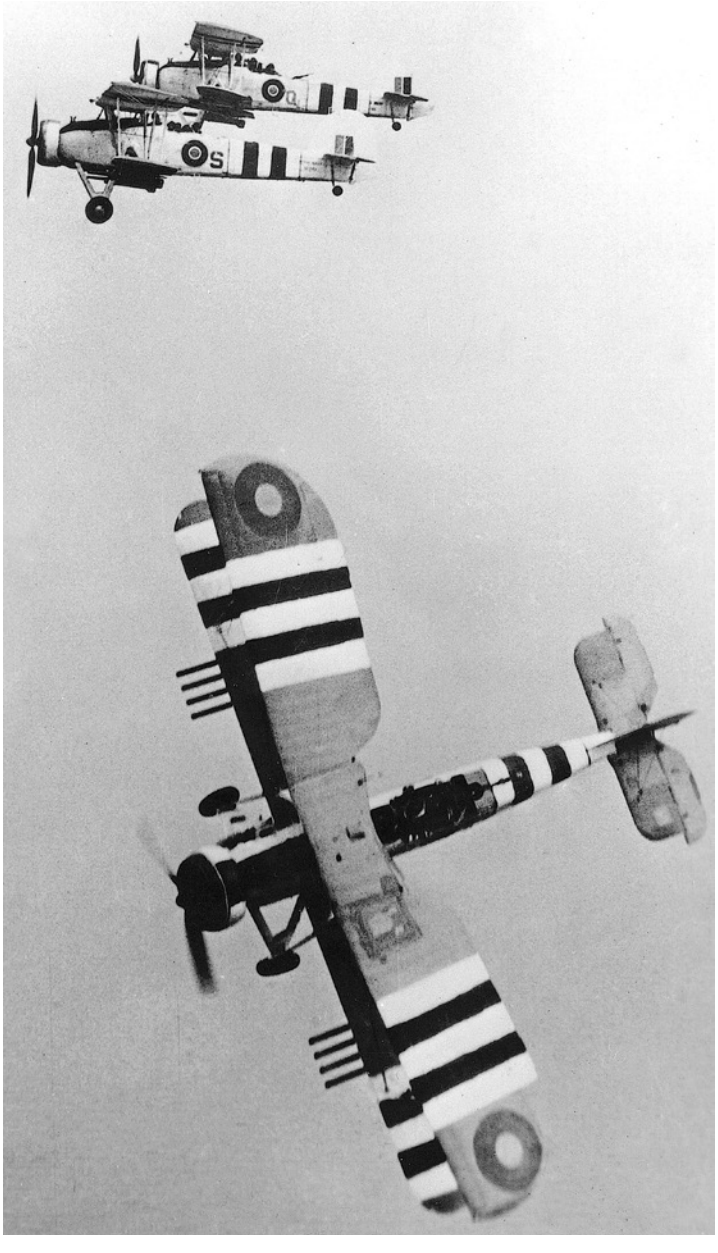
12 minutes after departure of the torpedo-bombers, the Spitfires were pulled away by Luftwaffe fighters, and soon after that the Swordfish were under attack themselves.

After the first pass, the leading three Swordfish were damaged but still flying, even after taking further hits from the destroyer screen's anti-aircraft fire. Esmonde aimed at the heavy cruiser *Prinz Eugen* but was shot down by a fighter just as he launched his torpedo. The other two aircraft reached a dropping point at long range – Lt B W Rose launched at *Gneisenau* and Sub-Lt C M Kingsmill at *Prinz Eugen*. All torpedoes missed, and both remaining aircraft were soon brought down – the wounded Rose later recalled that his 'Swordfish sat down very nicely' when he pancaked it into the water. Four of the nine crewmen of the first sub-flight were killed.

The second sub-flight was last seen heading towards *Prinz Eugen*. All three Swordfish were shot down with no survivors. The episode was a tragic and unnecessary waste, and highlighted the severe limitations of the Swordfish in circumstances it was never intended to operate in. Despite the attack's failure, the *Daily Mail* tried to put a positive spin on the events of 12 February 1942, reporting in its edition of the following day;

'This is an episode of which Britons can be rightly proud. In aeroplanes which, against the German protecting fighters, were as slow as a cart horse compared with a motorcar, 18 men of the Fleet Air Arm flew over the Channel. Crippled and ablaze before they got within range, they kept on, delivered their attacks – and died!'

While the Channel Dash, as it became known, was an extreme example, even routine operations with RAF Coastal Command could be dangerous. During night bombing and mine-laying missions to Cherbourg, Le Havre and other Channel ports between September 1942 and March 1943, 816 NAS lost 50 per cent of its aircrew, indicating the extent to which defences had been increased since 1940. The battered unit was relieved by



Liberally marked with D-Day identification stripes, rocket-armed Swordfish Mk IIs of 816 NAS peel off into an attack in support of the Normandy landings in June 1944. The squadron was attached to RAF Coastal Command at this time (*Author's Collection*)

836 and 825 NASs, which worked with Royal Canadian Air Force (RCAF) Hudsons and Hampdens in the anti-shipping role.

The procedure worked out over time was for the twin-engined aircraft to patrol, and report any targets for the Swordfish to attack. Mine-laying was also occasionally carried out, and these operations remained dangerous. It was easy to misjudge height and hit the sea, and on one occasion a pilot crashed due to being temporarily blinded by searchlights.

While numerous Swordfish units undertook a period of patrol work with RAF Coastal Command in between carrier embarkations, an unusual example was 841 NAS, which was actually attached to RAF Fighter Command for much of its career. Although the unit primarily flew Albacores, it also had two Swordfish on strength from January 1943. 841 NAS carried out anti-shipping sweeps, particularly against S-boats (designated E-boats by the Western Allies), with detachments at several south coast airfields. The unit disbanded in December 1943, transferring its activities to No 415 Sqn RCAF.

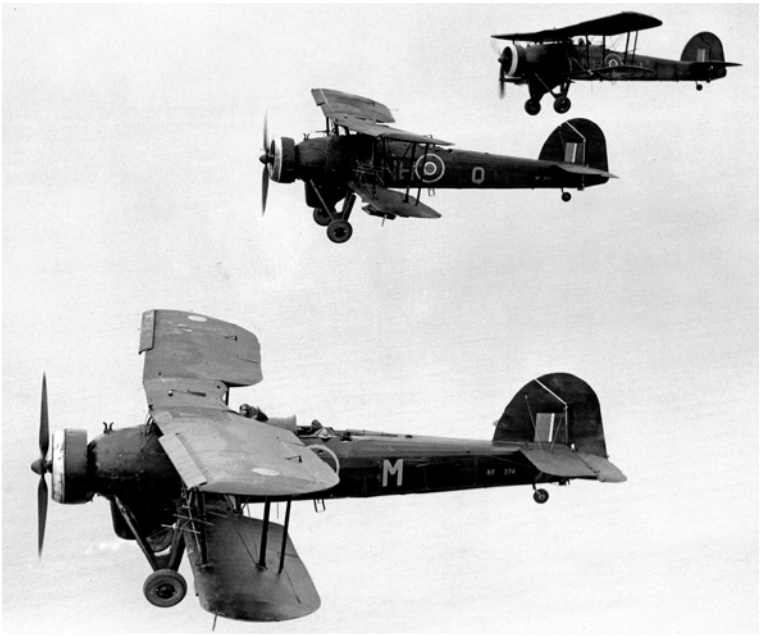
Another surge in FAA operations with RAF Coastal Command took place in the build-up to the Operation *Overlord* assault on Normandy on 6 June 1944. There was considerable danger posed by U-boats preying on the invasion shipping, so anti-submarine aircraft of the FAA were as important to the success of the operation as the bombers and fighters of the RAF and USAAF. The safety of convoys sailing along the English coast before turning south for Normandy largely fell to FAA aircraft, including Swordfish Mk II/III-operating 816 NAS at Perranporth, in Cornwall, 838 NAS at Harrowbeer, in Devon, and 819 NAS at Manston from April 1944.

On 6 June 819 NAS laid a smokescreen to cover convoy ETP 1 when it passed through the Strait of Dover. Meanwhile, large numbers of U-boats left their Atlantic bases for the Channel. In the four days following the invasion, 36 were sighted off the mouth of the Channel, and a further 47 through to month-end. More than half of these sightings resulted in attacks. According to Air Chief Marshal Sir W S Douglas, Commander-in-Chief, RAF Coastal Command, aircraft under his control, including the three Swordfish squadrons, made 'a great many attacks, mainly at

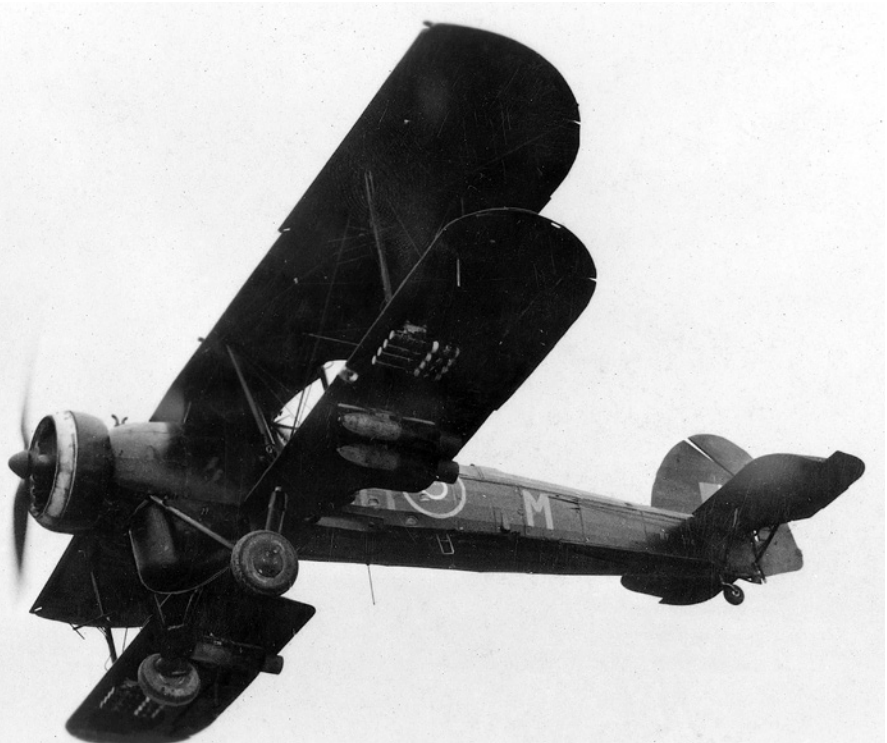
Swordfish of 836 and Free Dutch 860 NASs sit on the flightline at RNAS Maydown, in Northern Ireland, between anti-submarine patrols in 1944 (*Author's Collection*)

night, against E-boats, R-boats, "M"-class minesweepers and trawlers', adding, 'we know from prisoners of war that hardly an E-boat put to sea without being spotted and attacked from the air. There is no doubt that the menace of the enemy's light forces was held in check'.

The Swordfish remained on station until the risk lessened, and in August 816 and 838 NASs went back to their regular activities. In October, 819 NAS crossed the Channel to Belgium to tackle enemy shipping off the Dutch coast. Joining it was the RAF's No 119 Sqn, which operated Albacores at the time but switched to Swordfish Mk IIIs in February 1945. The two squadrons patrolled in search of Biber miniature submarines, which were operating out of the Scheldt river, and S-boats attempting to hamper cross-Channel shipping. A Biber was sunk by No 119 Sqn on 11 March, the first of four claimed over two days. 819 NAS disbanded that month, but Swordfish-equipped No 119 Sqn remained in service until the end of the European war on 8 May, disbanding on the 25th. This event brought to an end a remarkable run for an aircraft considered obsolescent at the outbreak of war in September 1939.



ASV Mk XI-equipped Swordfish Mk IIIs NF374 NH-M, NF343 NH-Q and NF370 NH-L of No 119 Sqn undertook the anti-shipping role over the English Channel and the North Sea between February and May 1945. NH-L sank a Biber miniature submarine on 12 March 1945 (*Author's Collection*)



Flying over the North Sea, Swordfish Mk III NF374 M of No 119 Sqn banks away from the photo-aircraft to reveal 250-lb bombs and parachute flares attached to its Light Series carriers beneath the wings. The aircraft also has Yagi antennas on the forward outboard wing struts (*Author's Collection*)

APPENDICES

APPENDIX 1

FRONTLINE SWORDFISH UNITS IN WORLD WAR 2

Fleet Air Arm

700 NAS – January 1940 to October 1943
701 NAS – September 1939 to January 1940
702 NAS – September 1939 to January 1940
767 NAS – June 1940 to July 1940
810 NAS – September 1939 to March 1943
811 NAS – September 1939 to December 1944
812 NAS – September 1939 to December 1942
813 NAS – September 1939 to May 1945
814 NAS – September 1939 to December 1942
815 NAS – October 1939 to July 1943
816 NAS – October 1939 to August 1944
818 NAS – September 1939 to October 1944
819 NAS – January 1940 to January 1941
820 NAS – September 1939 to June 1941
821 NAS – September 1939 to November 1941
822 NAS – September 1939 to March 1942
823 NAS – September 1939 to March 1942
824 NAS – September 1939 to October 1944
825 NAS – September 1939 to April 1945
826 NAS – July 1940 to September 1941
828 NAS – October 1941 to November 1941
829 NAS – July 1940 to October 1942
830 NAS – July 1940 to December 1942
833 NAS – December 1941 to September 1944
834 NAS – December 1941 to November 1944
835 NAS – February 1942 to March 1945
836 NAS – March 1942 to May 1945
837 NAS – March 1942 to June 1943
838 NAS – May 1942 to February 1945
840 NAS – June 1942 to August 1943
841 NAS – January 1943 to April 1943
842 NAS – February 1943 to January 1945
848 NAS – August 1944
860 NAS – June 1943 to June 1945
886 NAS – June 1943 to October 1943

RAF

No 3 AACU – September 1939 to September 1940
No 4 AACU – September 1939 to March 1942
No 119 Sqn – February 1945 to May 1945
No 202 Sqn – October 1940 to June 1941

APPENDIX 2

SQUADRON NUMBERING

From 1923, the FAA, which was then part of the RAF, was organised into flights of six aircraft in categories of fighter, torpedo-bomber, fleet spotting and reconnaissance. The gunnery spotting and reconnaissance categories were merged in 1929.

In 1933, the flights were mostly abolished in favour of larger 12-aircraft squadrons, with three-digit identities in similar fashion to the RAF. FAA squadrons started from 800, with 800–809 being earmarked for fighters, 810–819 for torpedo-bomber aircraft and 820–829 for gunnery spotting and reconnaissance types. In 1934, the torpedo and spotter-reconnaissance categories were merged with the arrival of the Shark and, in 1936, the Swordfish, with these two aircraft being designated TSR types, effectively meaning that all squadrons in the 810–829 sequence now had the same roles. By 1937 the Sharks had been replaced in these squadrons, meaning that upon the outbreak of war, all TSR units were equipped exclusively with the Swordfish.

For the time being, six-aircraft flights were retained for catapult aircraft for cruisers and capital ships. These were numbered in the 700-series. In the late 1930s, catapult units were reorganised into squadrons, most combined into 700 NAS, but a few gained squadron status in their own right. Training units were initially categorised as schools and did not have numbers in the three-digit sequence, but in 1939 they were brought within the squadron system and allocated numbers in the 750–799 range. The decline in the need for catapult aircraft and the expansion of the service during the war led to training squadrons taking many of the 700–749 series number plates, and catapult squadrons were finally phased out altogether in early 1944, whereupon the whole 700–799 series was given over to second-line units only. By this time, the Swordfish was long gone as a catapult type.

The expansion of the FAA during World War 2 meant that the previously allocated squadron blocks quickly ran out, and new TSR squadrons were formed in the 830–839 and 840–849 series in

1940–42. All but a few were equipped with Swordfish, either on formation or later. Several of them became heterogeneous squadrons equipped with both Swordfish and fighter aircraft for operation on escort carriers.

The relatively limited production of the Swordfish's intended successor, the Albacore, meant that several squadrons formed with this type had to rely on Swordfish to supplement or even entirely replace their Albacores. More significantly, the decision to equip the new escort carriers and slightly later MAC-ships with Swordfish in the anti-submarine role led to a second wave of squadron expansion with the type after it had been phased out as a fleet torpedo-bomber. The 860–869 series was assigned to squadrons manned by Royal Netherlands Navy personnel, and one of these (860 NAS) was equipped with Swordfish. The aircraft even operated under a fighter number plate when Seafire-equipped 886 NAS gained a few Swordfish for anti-submarine support in 1943.

COLOUR PLATES COMMENTARY

Swordfish in World War 2 wore three basic camouflage schemes, although there was a plethora of variations within each one and numerous specialised schemes.

FAA aircraft at the outset of war were, in the main, painted in the approved S1E scheme which consisted of a disruptive camouflage of Extra Dark Sea Grey and Dark Slate Grey on uppersurfaces, with 'shadow compensation' so the lower wings were Dark Sea Grey and Light Slate Grey. Lower surfaces and sides (including fin) were Sky Grey (not to be confused with Sky).

The FAA's three-character codes, with a letter indicating the parent carrier, a number indicating the squadron and an individual aircraft letter, were typically applied to the fin and prominently repeated on the underside of the upper wingtip. National markings were red-blue roundels ('Type B') on the upper wings and fuselage sides. Alterations to national markings were introduced in November 1939, with updated roundels and the addition of a fin flash in May 1940.

The second main scheme was the Temperate Sea Scheme (TSS) introduced in June 1940. This replaced Sky Grey as the underside colour with Sky, and extended the uppersurface colours to the fuselage sides. There were various interpretations of the Air Ministry guidance particularly in relation to the demarcation between upper and lower surface colours. Aircraft built by Blackburn can be readily identified by the way in which the camouflage colours were applied, with the demarcation at the halfway line at the nose, curving downward to the wing leading edge, and from the training edge sloping up to the tailplane. This was applied very uniformly at the Blackburn factory.

Alterations were made to national markings from July 1942, going from constant-width bands to a narrow white band between broad red and blue. Otherwise, the scheme remained unaltered for the rest of the war other than in specific theatres. Codes moved from tail to rear fuselage.

The final widespread scheme was the so-called 'Atlantic' scheme, which was adopted for aircraft operating from escort carriers in northern latitudes from late 1942. This retained the previous disruptive camouflage on the uppersurfaces of the wings and tailplane and the top of the fuselage, and was white on most of the fuselage and the wing undersides. This was applied at the factory, as well as being added to older aircraft where necessary.

1
Swordfish Mk I K8397 E4H of 813 NAS, HMS *Eagle*, September 1939

While regulations required camouflage schemes to be applied to FAA aircraft from May 1939, these took time to apply because of a shortage of the correct paints, especially for aircraft based on stations that were distant from Britain in the run-up to war. In September 1939, K8397 E4H of 813 NAS embarked in *Eagle*, then on the China Station, still wore the factory-applied peacetime scheme of aluminium-doped fabric surfaces and Cerrux Grey-painted metal surfaces, along with the recently introduced three-character alphanumeric codes. Some Swordfish continued to wear this scheme as late as mid-1940.

2
Swordfish Mk I P4199 E8F of 702 NAS, HMS *Resolution*, December 1939

Fairey-built P4199 was delivered five days after the outbreak of war and joined 702 NAS, which provided catapult aircraft to the 2nd Battle Squadron, in December 1939, with the code E8F. Catapult units were absorbed into 700 NAS in January 1940, so it was with this unit that P4199 took part in the Norwegian campaign. Damaged by enemy bombing, it had to be towed by a steamship to Harstad, in Norway, for transport home and repair.

3
Swordfish Mk I (serial unknown) T4W of 767 NAS, HMS *Argus*, July 1940

This aircraft is something of a mystery. It belonged to 767 NAS, the training unit flying from *Argus* when war broke out with Italy in July 1940. The squadron duly took part in the first Allied raids on Italian territory, before splitting to form 830 NAS while the remainder of 767 NAS returned home. The fin flash and three-character code is typical of operational aircraft in the second half of 1940, although it could sometimes be seen on training aircraft after that. The aircraft's identity is not known, as the serial is not displayed. Instead, it has been adorned with the additional code D1B on the fuselage, despite D1 codes never officially being issued to any unit operating Swordfish.

4
Swordfish Mk I K8422 4H of 813 NAS, HMS *Eagle*, September 1940

K8422, a Fairey-built Mk I, was received by 813 NAS embarked in *Eagle* in early 1940, whereupon it was coded E4H (later reduced to 4H, as depicted here). The aircraft took part in the raid on Augusta that resulted in the sinking of the destroyer *Leone Pancaldo* and then the attack on Taranto. Armed with 250-lb bombs, it was one of four Swordfish that fell victim to anti-aircraft fire and CR.42 fighters during a raid on Maritza airfield on 4 September. K8422 was subsequently repaired and then flown by Rhodes-based bomber unit 68ª *Squadriglia* of 34° *Gruppo Bombardamento* as a liaison aircraft until June 1941.

5
Swordfish Mk I P4217 L of 814 NAS, HMS *Hermes*, September 1940

P4217 was a Fairey-built Mk I delivered in October 1939. It was issued to 814 NAS aboard *Hermes* on the Atlantic station, where the Swordfish was coded H3L, although this was later reduced to the individual aircraft letter L. In September 1940, P4217 was loaned to 810 NAS embarked in *Ark Royal* when the carrier was on temporary attachment in the Atlantic for activities over Dakar during the unsuccessful Operation *Menace*. When attempts at negotiation with French authorities at the port were refused, aircraft attacked warships in the harbour, resulting in P4217 being shot down by *Richelieu*'s anti-aircraft guns on 24 September and its crew captured.

6
Swordfish Mk I K8418 5K of 824 NAS, HMS *Eagle*, October 1940

K8418 saw lengthy service with squadrons attached to *Eagle* from December 1939, initially being assigned to 813 NAS and then 824 NAS until February 1941. With the latter unit, as E5K, it took part in a raid on Tobruk on 24 October 1940 while being flown by Lt N A F Cheeseman, and K8418 is seen here (armed with a Mk XII torpedo) as it appeared around that time, with coloured stripes on the fin denoting a flight leader's aircraft.

7
Swordfish Mk I P4221 5L of 819 NAS, HMS *Illustrious*, November 1940

Fairey delivered P4221 to the FAA on 10 October 1939, the aircraft being allocated to 819 NAS upon the unit's formation in January 1940 with crews transferred in from *Glorious* and *Ark Royal*. After a spell operating under RAF Coastal Command control, 819 NAS was assigned to the new carrier *Illustrious*. P4221 was coded L5L, and it was one of three aircraft that crashed due to contaminated fuel in the lead up to the Taranto raid – in P4221's case, just the day before the attack. Its crew was rescued and took part in the raid.

8
Swordfish Mk I P4127 4F of 820 NAS, HMS *Ark Royal*, November 1940

P4127 was a Fairey-built Mk I that was issued to 820 NAS, embarked in HMS *Ark Royal*, in April 1940. The aircraft looked like this when it took part in a bombing raid on Cagliari in November that saw the torpedo-bomber so badly damaged by anti-aircraft fire its pilot had to force-land on Sardinia. The Swordfish was subsequently repaired and then tested at the *Stabilimento Costruzioni Aeronautiche* at Guidonia, near Rome.

9
Swordfish Mk I L9774 F of 815 NAS, Maleme, Crete, March 1941

L9774 was issued to 815 NAS, assigned to *Illustrious*, in July 1940. Around the time the carrier arrived in the Mediterranean in September, some squadron aircraft, including L9774, had their TSS modified with black undersides for night operations. When shore-based in Greece in early 1941, this aircraft took part in attacks on Durazzo, Valona and Brindisi, and after being transferred to Maleme, it was flown by Lt F M A Torrens-Spence during the Battle of Cape Matapan in late March, when the Swordfish may have torpedoed the cruiser *Pola*. By this time, the carrier letter and squadron number had generally been dropped from the aircraft codes, although many Swordfish still wore them on the fin rather than the fuselage. Aside from being armed with a Mk XII torpedo, L9774 has been fitted with an extra fuel tank in the Observer's seat.

10
Swordfish Mk I V4367 of 700 NAS, HMS *Malaya*, October 1941

V4367 was built by Blackburn and delivered to the FAA in April 1941. Issued to 700 NAS, the pool unit for catapult aircraft, the aircraft was fitted with floats and allocated to the battleship *Malaya* in August. The aircraft wore the characteristic Blackburn factory interpretation of the TSS and did not have a code applied during its spell aboard *Malaya.*

11
Swordfish Mk I W5909 of 810 NAS, HMS *Illustrious*, March 1942

W5909 was built by Blackburn, delivered in November 1941 and received by 810 NAS the following month when that unit increased in size from six to 12 aircraft. Given the code 2B, W5909 crashed into the catwalk during deck-landing practice aboard *Illustrious* but the damage was repairable. In March 1942, the squadron embarked for Operation *Ironclad*, although W5909 did not make it as far as Madagascar, being destroyed in a hangar fire in April along with ten other aircraft.

12
Swordfish Mk I V4420 2C of 812 NAS, USS *Wasp* (CV-7), April 1942

Blackburn-built Mk I V4420 joined 812 NAS in December 1941 during the squadron's campaign of anti-shipping operations based at North Front, with brief embarkations aboard *Argus*. The squadron returned to Britain aboard the US Navy carrier *Wasp* in April 1942, with a well-weathered and patched-up V4420 boasting small nose art in the form of an old sailor on its forward fuselage.

13
Swordfish Mk II DK782 B of 834 NAS, NAS New York, New York, August 1942

In 1942, 834 NAS was based for several months at the former commercial airport for New York, Floyd Bennett Field. By this time, the site had become NAS New York, and it was home to 834 NAS between July and October that year while it waited for *Archer* to have its unreliable engines overhauled. DK782, coded B and depicted here carrying depth charges and Smoke Float No 1 Mk IVs, was one of several Mk IIs received by the squadron during this period before it finally re-embarked on *Archer* to sail to Britain with an eastbound convoy, providing anti-submarine cover.

14
Swordfish Mk II DK694 A of 816 NAS, RAF Thorney Island, West Sussex, September 1942

DK694, fitted with ASV Mk II radar (a Yagi antenna for the system is visible on the forward outboard wing strut), was issued to 816 NAS in June 1942 when that unit re-equipped with newer Swordfish Mk IIs. The squadron was based at Machrihanish, in Scotland, and then, from September, at Thorney Island, where it operated as part of RAF Coastal Command's No 16 Group. While

assigned to the latter unit, 816 NAS undertook nocturnal anti-shipping operations over the English Channel, suffering heavy losses. DK694 wore the Blackburn factory TSS, somewhat patched, with a single code letter on the rear fuselage.

15

Swordfish Mk I V4515 4A of 813 NAS, Tafaraoui, Algeria, November 1942

V4515 survived the sinking of *Ark Royal* while with 812 NAS, operating with that unit from Gibraltar until it returned home in April 1942. The aircraft was then transferred to 813 NAS, flying from *Eagle* until it too was sunk, and then North Front, prior to the unit transferring to Tafaraoui in November 1942 in the wake of the *Torch* landings in North Africa. Detachments began operating from Blida and Bône shortly afterwards for coastal patrol, and V4515 went missing during a flight between these airfields in February 1943 with the loss of the crew. The code characters with unusually wide spacing were a feature of contemporary 813 NAS Swordfish.

16

Swordfish Mk II HS227 5A of 835 NAS, HMS *Battler*, April 1943

HS227 was an ASV-equipped Mk II which joined 835 NAS in February 1943, receiving the code 5A. It was well photographed during the work-up cruise of the escort carrier *Battler* in April of that year. Two months later, HS227 was part of a detachment of five Swordfish aboard *Battler* providing anti-submarine cover to convoy OS 49 from Liverpool to Freetown. Unfortunately, it suffered an undercarriage collapse due to a heavy landing on the first day of the convoy's sailing. HS227 wore the Blackburn factory-applied TSS scheme, with post-1942 national markings and codes in Dull Red outlined in black. A small piece of nose art representing a gauntlet grasping a propeller was applied to the fuselage above the lower wing leading edge.

17

Swordfish Mk II LS226 H4 of 836 NAS's H Flight, MV *Empire MacAndrew*, February 1944

LS226 belonged to 836 NAS, the unit providing the aircraft and aircrews to the non-Dutch MAC-ships. In November 1943 the Swordfish was allocated to H Flight, assigned to *Empire MacAndrew*, and it received the code H4. H Flight sailed with *Empire MacAndrew* on convoys to Nova Scotia in November–December 1943, January–February 1944 and April–May 1944. In February 1944 LS226 had taken took part in a search for a missing Wellington, with the Swordfish being crewed by Sub-Lts R Meen and B E Ryley and LA O Cribb.

18

Swordfish Mk II LS298 O3 of 860 NAS's O Flight, MV *Macoma* summer 1944

LS298 was delivered in August 1943 and joined 860 NAS in November, the squadron providing aircraft and Dutch aircrew for the two Dutch-flagged MAC-ships MV *Gadila* and MV *Macoma*. Although 860 NAS was formally part of the FAA, the aircraft wore the Dutch orange triangle on the fin. LS298, christened *Toevallig* ('Chance' in Dutch) and depicted here armed with RP-3 60-lb rocket projectiles, operated with O Flight aboard *Macoma* as O3, escorting Atlantic convoys in 1944–45. Most crossings were uneventful, although an O Flight crew reported the location of a submarine in the north Atlantic that a Swordfish from another MAC-ship duly sank on 8 July 1944. Sadly, it was the Free French submarine *Perle*, and only one survivor from its 42-man crew was rescued.

19

Swordfish Mk II NF243 S of 816 NAS, RAF Perranporth, Cornwall, June 1944

NF243 was one of the last handful of Mk IIs built before production switched to the Mk III. It was delivered to 816 NAS in February 1942 and operated with that squadron until the end of the war in Europe. From April 1944, 816 NAS operated from Perranporth under the control of RAF Coastal Command's No 19 Group, and it contributed to anti-shipping efforts in support of the Normandy landings in June 1944, for which it was marked with identification stripes as seen here.

20

Swordfish Mk II HS643 CM of 824 NAS, HMS *Striker*, June 1944

HS643 was operated by the second incarnation of 824 NAS after it reformed in late 1942 for the convoy escort role. The Swordfish was delivered to the unit, then embarked in HMS *Striker*, in August 1943, and it is depicted here ten months later carrying a Mk 24 FIDO 'mine' – a revolutionary homing torpedo, with a nose ring (to prevent damage on entry to the water) and 'box' tail. Some aircraft, including HS643, of 824 NAS featured unusual codes of two letters, widely spaced and of different sizes.

21

Swordfish Mk III NR995/G F of 838 NAS, RAF Thorney Island, West Sussex, December 1944

Delivered a few months before the end of Swordfish production, NR995/G was a Mk III received by the FAA in June 1944. The 'G' suffix indicated that it was to be kept under guard at all times, suggesting the aircraft was used to test experimental equipment. Fitted with RATOG and a large ventral radome that contained an ASV Mk XI radar, NR995/G saw service with 813 NAS before going to 838 NAS, where it was coded F. The aircraft's last appointment was with 836 NAS's B Flight, attached to the MAC-ship *Empire MacDermott.*

22

Swordfish Mk III NF410 NH-F of No 119 Sqn, RAF Bircham Newton, Norfolk, February 1945

NF410 was delivered to the FAA in April 1944 and eventually passed on to the RAF's No 119 Sqn in February 1945. Coded NH-F, the aircraft was painted in overall Night (black) for nocturnal anti-shipping operations from Bircham Newton in the last months of the war in Europe, using ASV Mk XI radar to locate enemy surface vessels and submarines attempting to attack cross-Channel shipping. While with the RAF NF410 received 'Donald Duck' nose art.

SELECTED BIBLIOGRAPHY AND SOURCES

Primary Sources

815 NAS Diary, ADM 207/13

Aircraft requirements in 1944, Director of Naval Air Division, 15 February 1942, ADM 1/11938

Anti-submarine operations from North Front Gibraltar 27 November 1941–14 January 1942, Commanding Officer 812 NAS, 17 January 1942, IWM 78/1/1

Battle Summary No 8 – Operation *MA5* and Action off Calabria, Naval Staff, August 1954, pg 14

Brian Ryley interviewed by the author, 16 March and 20 August 2020

Condition of Swordfish aircraft of 821 NAS 'X' Flight received to reinforce Malta, ADM 1/11148

First strike on Italian Fleet at Battle of Calabria, 9 July 1940, Officer Commanding 824 NAS, 14 July 1940, ADM 199/1048

German Battleship *Bismarck* Interrogation of Survivors, August 1941, Naval Intelligence Division, CB 4051 (24) pg 19

IWM Oral History, Ian Gordon Templer, Catalogue No 28462

Lessons from Wartime Experience, Vice-Admiral Aircraft Carriers, 20 August 1940, ADM 199/847

Narrative, The Battle of Cape Matapan, Commander-in-Chief Mediterranean, ADM 199/781

Operation *DX* account off Norway 23 April–3 May 1940, Norway: Naval air operations 23 May 1940, ADM 199/479

Operation *Menace* – attack on Dakar, 23–25 September 1940, Part 5 Appendix 4 remarks on air co-operation, ADM 199/906

Operations in Iraq 29 April–19 May 1941, Commander-in-Chief East Indies Station, 4 July 1941, ADM 1/11459

Operations off Norway 8–28 April 1940, Norway – Naval air operations, 30 April 1940, ADM 199/479

Order for Fairey Swordfish instead of Fairey Albacores, 25 October 1939, ADM 1/10114

Orders for Fairey Swordfish aircraft for Auxiliary Carriers, Head of Air Branch, 4 April 1942, ADM 1/11956

Performance of 100-lb Mk IV anti-submarine bomb, 10 February 1940, ADM 1/10734

Peter Jinks interviewed by the author, Navy Wings Swordfish Heritage Day, RNAS Yeovilton, 21 September 2018

Requirements for aircraft carriers in Mediterranean, Naval Commander Expeditionary Force, 19 November 1942, PREM 3/163/1

Requirement for floatplane fighter aircraft, 28 June 1940, ADM 116/4457

Sinking of *U-752*, 819 NAS Diary, 23 May 1943, ADM 207/15

War Cabinet Confidential Annex, 12 June 1940, CAB 65/13-40

Secondary Sources

Douglas, Sholto, ACM Sir, Despatch Liberation of Europe Operations of Coastal Command, RAF, from May to August 1944, Second Supplement to the *London Gazette*, 30 October 1947

Jones, Ben, *The Fleet Air Arm in the Second World War volume I 1939–1941*, Navy Records Society, 2012

Jones, Ben, *The Fleet Air Arm in the Second World War volume II 1942–1943*, Navy Records Society, 2018

Naval Staff History, *The Royal Navy and the Mediterranean Volume II*, HMSO, 31 December 1957

Poolman, Kenneth, *Escort Carriers 1941–1945*, Ian Allen, 1972

Poolman, Kenneth, *Night Strike From Malta: 830 Squadron RN and Rommel's Convoys*, Jane's, 1980

Roskill, Stephen, Capt, *The Cantankerous Captain of HMS Glorious*, Sunday Times, 15 June 1980

Sturtivant, Ray and Ballance, Theo, *Squadrons of the Fleet Air Arm*, Air Britain, 1994

Sturtivant, Ray and Burrow, Mick, *Aircraft of the Fleet Air Arm 1939 to 1945*, Air Britain, 1995

Wellham, John, *With Naval Wings: The Autobiography of a Fleet Air Arm Pilot in World War II*, Spellmount, 1995

Websites

A View from the Back – The Recollections of a Fleet Air Arm Observer 1941–46, Anthony Inman, BBC WW2 People's War, https://www.bbc.co.uk/history/ww2peopleswar/stories/14/a8108714.shtml

Armoured Carriers – https://www.armouredcarriers.com/

HMS *Glorious* – The cover up of Churchill's Operation Paul, https://www.hmsglorious.com

The Crusader Project – https://rommelsriposte.com

INDEX

Note: page numbers in **bold** refer to illustrations, plates and captions.

accidents **6**, **7**, 10–11, 46, 56, 58, 65, 70, 74, **79**, **82**, **93**
Admiralty, the 11, 19, 29, 51, 60, 71, 74, 78, 80
aircraft 13–14, 18, 19, 21, 25, **25**, 30, 31, 34, 46, 48, 61, 67, 68, 69, 70, 71, 73, 79, **79**, 85, 87, 88, 89, **92**
  Blackburn Skua (UK) 11, 14, 15, 17, 19, 56, 59
  Fairey Albacore (UK) 11, 22, 53, 54, 55, 65, 66, 67, 72, 73, **74**, 78, 89, 90, **92**
  Fairey Fulmar (UK) 46, 61, 69, **74**
  Fairey Swordfish (UK) 6, **6**, 10, 12–13, **13**, 14–16, **16**, 17–22, 24–26, **26**, **27**, **28**, **29**, **30**, 31–34, **33**, 46–47, **48**, 49–55, **56**, 57, **57**, 58, 59, **59**, 60–61, **62**, 62–64, **63**, 65, 66, **66**, **67**, 68, **69**, 69–72, 73–74, 76–79, **79**, 83, **83**, 84, 88, **91–92**
    Mk I 7, 9, 17, 21, 23, 24, 55, 55, 92
      K8397 E4H **35(92)**
      K8418 5K **37(93)**
      K8422 4H **36(92)**
      L9774 F **39(93)**, 54, **54**
      P4127 4F **38(93)**
      P4199 E8F **35(92)**
      P4217 L **28**, **37(93)**
      P4221 5L **38(93)**, **46**
      V4367: **25**, **39(93)**
      V4420 2C **40(93)**, **71**
      V4515 4A **42(94)**
      W5909: **40(93)**
    Mk II **74**, 81, **81**, 82, **83**, **84**, **85**, **88**, 89
      DK694A **41(93–94)**, **87**
      DK782 B **41(93)**, **80**
      HS227 5A **42(94)**, **81**
      HS643CM **44(94)**
      LS226 H4: **43(94)**
      LS298 O3: **43(94)**, **84**
      NF243 S **44(94)**
    Mk III 85, **86**, 89, 90, **90**
      NF410 NH-F **45(94)**
      NR995/G F **45(94)**
  Hawker Hurricane (UK) 18, 22, 56, 67, 82, **83**
  Junkers Ju 87 (Germany) 15, 20, 53, 55
  Martlet (Grumman Wildcat) (UK) 71, **79**, 80, 83, **83**
anti-aircraft fire 15, 21, 22, 27, **28**, 31, 33, **33**, 34, 50, **50**, 51, 56–58, 63, 70, 83, **92**, **93**
anti-submarine patrols 9–10, 13–16, 18, 22, 24, 28, 30, 47, 53, 61, 67, 69–71, **71**, 72, 79, 82, **82**, 84, 89, **89**, **92**, **93**, **94**
Augusta port raid, the 32–33, **92**

Battle of Calabria, the 31–32, 57
Battle of Cape Matapan, the 53–55, **54**, 72, **93**
Battle of Cape Spartivento, the 58–59, 66
Battle of the Atlantic, the 9, 10
Battle of the Denmark Strait, the 62
Blackburn Aircraft 11, 55, **55**, 81, **81**, **85**, **92**, **93**, **94**
British-French relations 24–28, 30, 70

Cagliari raid, the 56–58, **93**
camouflage **35(92)**, **42(94)**, **45(94)**, 72, 81, **85**, **93**
catapult units 8, **23**, 25, **91**, **92**, **93**
Channel Dash, the 87–88
cockpit, the **(6)7**, 33, **50**, **62**
contaminated fuel **46**, 49, **93**
convoys and supply routes 8–9, 47, 52, 59, 60, 66, 69–71, 77, 80, 82, 84, **84**, 85, 89
Cunningham, Vice-Adm Sir A B 31, 32, 49, 51, 54, 55, 57, 68, 69, 74

deaths 20, 21, 22, 53, 56, **64**, 69, 88
design **6**, 7, 81, **85**, **86**
Duplex pistol fuses 17, 26, 52, 58, 62, 63

East African campaign, the 75–77, **75**, 79
engines **6**, 7, 11, 15, 16, **80**, 81, 82, 83
escort carriers 82–85, **83**, **84**, **85**

Free French forces, the 27, 28, **94**

Gazala raid, the 34
Genoa raid, the 60
German strategy 18–20, 30, 53, 61–62, 64–65, 71–72
Greek operations 72
gunnery spotting 21, **23**, 24, 28

IJN (Imperial Japanese Navy), the 77–79
Indian Ocean theatre, the **75**, 75–79
Iraq uprising (April 1941), the 76–77

Kriegsmarine, the 20, 26, 87
  ships 10–13, 18, 22, 59–61, 64–65, 87–88
    Bismarck (battleship) 61–62, **62**, 63–64, **64**
    Scharnhorst (battlecruiser) 18–20, 60, 61, 66–67, 87
  U-boats 9, 13, 61, 66, **66**, 67, 70–73, 80, 82–86, 89

long-range fuel tanks 17, 21, 34, 47, 48, **50**, **54**, 60, 69, **69**
Luftwaffe, the 15, 17, 53, 82, 88

MAC-ships (Merchant Aircraft Carriers) **83**, 84, **84**, **85**, **92**, **94**
maintenance and repairs 10, 14, 19, 20, 22, 49, 52, 53, 55, 62, 69, 70, **74**, 78, **92**, **93**
Malta as base 22, 23, 29, 30, 32, 47, 48, 49, 51, 53, 56, 59, **59**, 65–66, 67, 68–69, **69**, 73
Marine Nationale, the 10, 24, **25**, 25–27, **26**, 30, 56, 70, 72–73, 79
  Richelieu (battleship) 27, **27**, 28, **28**, **93**
markings and codes **29**, **36(92)**, **39(93)**, **41(93)**, **41(94)**, **42(94)**, **43(94)**, **44(94)**, **45(94)**, **88**, **91–92**
matèriel losses 9, 12, 19, 21–22, 25, 28, 30, 31, 33, 34, 47, 48, **50**, 51–54, 62, 64, 66, **66**, 67, **67**, 69, 71–76, **76**, 78, 79, 82, 83, 85, 86, 88, 90, **90**, **93**, **94**
medals and awards 20, 64
Mediterranean theatre, the 29–60, 72, **93**
military strengths and complements 8, 14, 15, 46, 47, 53, 55, 59, 61, 70, 78, **93**
minelaying 20, 22, 24–25, 47, 65, 69, 89

night missions 20, 21–22, 32–34, **45(94)**, 47, 57, 69, 71, 78, 86, **93**
Norwegian campaign, the **8**, 11–20, **13**, **16**, 46, 57, **92**

Operations 31–32, 46, 47, 56, 57, 65, 66, 67, 75, 89, **93**
  Catapult (July 1940) 24–27, **25**, **26**
  Fuller (February 1942) 87–88
  Ironclad (May 1942) **75**, 79, **79**
  Menace (September 1940) 28, **28**, 58, **93**
  Rheinübung (May 1941) 61–62
  Torch (November 1942) 67, 68, 74, **82**, 83

performance 6, 7, 11, 14, 22, 25, 33, 58, 59, 74, 82, 83, 85
Pound, Adm Sir Dudley 19, 48
PoWs 22, **28**, 33, **50**, 57, 69, 90
production 7, 11, 55, **55**, 81, 85
prototypes and tests 7

radar systems 9, **41(93)**, **45(94)**, 62, 63, 71, 72, 73, 80, **81**, 83, 85, **86**, 87, **90**
RAF (Royal Air Force), the 6, 31, 34, 48, 87
  AACU (Anti-Aircraft Co-operation Units) 69, 77, **91**
  Coastal Command 19, 20, 22, 86, **87**, 88, **88**, 89, **93**, **94**
  No 119 Sqn **45(94)**, 90, **90**, **91**
  No 202 Sqn 70, 71, **91**
ranges 21, 34
reconnaissance 6, **8**, 12–17, 19, **23**, 24–28, 32, 33, 47–49, 53–55, 58, 59, 61, 64–66, 70, 75–77
Regia Aeronautica, the 33, **92**
Regia Marina, the 29–34, **33, 45(94)**, **46**, 47, 48, 51–52, 55–58, 60, 76, **76**, 90, **93**
  Vittorio Veneto (battleship) 50, 53–55, 58, 59
Rhodes raids, the 46–47, 52
Royal Navy, the 30
  821X Flight 59, **59**, 60
  FAA (Fleet Air Arm) 6, 7, 13, 14, 22, 23, 28, 31, 32, 34, 54, 68, 69, 86, 87, **91**
  Force H 56, 57, 60–62, 67, 78

NAS (Naval Air Squadrons) 8, 10, 12–15, **16**, 17, 18, 20, **35(92)**, 46, 53, 54, 67, 73–75, 78, 79, 82, **82**, 89, **91**
  700 NAS **25**, 33, **39(93)**, 54, **91**, **92**
  767 NAS 23, **24**, **36(92)**, 68
  810 NAS 16, 20, 28, **28**, **40(93)**, 56, **57**, 58, 60, 63, 66, 79, **79**, **93**
  812 NAS 20, 22, 66, **66**, 71, **71**, 72, 81, **94**
  813 NAS **9**, 30, **30**, 31–33, **35(92)**, **36(93)**, **42(94)**, 47, 51, 66, 67, **67**, **68**, 74, 76, 85, **94**
  814 NAS 27, **27**, **28**, **37(93)**, 75–78
  815 NAS 20, 21, 22, **39(93–94)**, 46, 47, 49–54, **50**, **54**, 72–73, **73**
  816 NAS **41(93)**, **44(94)**, 65, 66, **66**, 85, 86, **87**, 88–90, **88**
  818 NAS 56, **56**, 58, 63–65
  819 NAS **38(93)**, 46, **46**, 47, 49, 51–53, 83–85, 89, 90
  820 NAS 8, **8**, 14–15, 16, 28, **38(93)**, 56, **56**, 57, 59, 60, 63–65
  821 NAS 19, 20, 53, 59, 73, 87
  823 NAS 15, 17–20
  824 NAS **29**, 30–34, **37(93)**, **44(94)**, 47, **48**, 50, 51, 66, 67, **68**, 76
  825 NAS 21, 22, 62, **63**, **64**, 65, 66, **66**, 82, **83**, 85, 87, 89
  830 NAS 23, **24**, 59, 68, **69**, 69–70, 73, 74, **92**
  834 NAS **41(93)**, **80**, 81–82
  835 NAS **42(94)**, **81**, **83**
  836 NAS **43(94)**, 82, **83**, 84, 89, **89**, **94**
  860 NAS **43(94)**, 84, **84**, **89**, **92**
ships 8, 9, 17, 19, 20, 22, 23, **23**, 60–65, **62**, 67, **75**, 76, 78–83, **81**, **82**, **83**, 84, 85
  HMS *Archer* (auxiliary carrier) **80**, 81, 82, 83, 84, 85, **93**
  HMS *Argus* (carrier) 56, 59, 66, 67, **92**, **93**
  HMS *Ark Royal* (carrier) 8, 8, 9, 10, 14–20, **16**, 22, 23, 25, 26, **26**, 28, **28**, 46, 53, 56, **56**, 57, **57**, 58–61, **59**, 64–66, **66**, 71, 72, **93**, **94**
  HMS *Eagle* (carrier) 8, **9**, 10, 11, **29**, 30–34, **30**, 46, 47, **48**, 49, 52, 53, 65–67, **67**, **68**, 76, **76**, **92**
  HMS *Formidable* (carrier) 53–55, 68, 72, 78, 79
  HMS *Furious* (carrier) 10, 11, **11**, 12–13, **13**, 14, 17, 20, 22, 59, 87
  HMS *Glorious* (carrier) 10, 14, 15, 17–20, 30, 48, **93**
  HMS *Hermes* (carrier) 9, 10, 24, 27, **27**, 75–79, **93**
  HMS *Illustrious* (carrier) 34–46, 47–49, **48**, 52, 53, 68, **69**, 72, 79, **79**, **93**
  HMS *Victorious* (carrier) 62, **63**, 64, **64**
  HMS *Warspite* (battleship) 12–13, **13**, 32, 33, 54

sea rescues 34, **46**, 55, 73, **93**, **94**
Second Naval Battle of Narvik, the 12, 13, **13**

TAG (Telegraphist Air Gunner), the **6(7)**, 46, **48**
Taranto raid, the **46**, 48, **48**, 49–52, **50**, **92**, **93**
Tobruk raid, the 31, 33, 47, **93**
training and experience **7**, 8, 10, 20–23, **21**, **24**, **27**, 30, 48, 49, 57, 59, 62, 69, **73**, 78, **82**, **91**, **93**
TSR ('torpedo-spotter-reconnaissance') requirement 6–7, 53, 55, 59, 62, 66, 69, 81, 86, **91**

US Navy, the 71, 85

Vichy France 28

weaponry 12, 16, 17, 22, **33**, **44(94)**, 46, 61, 82, 83, **93**
  100-lb anti-submarine bomb (UK) 9, 13, **56**
  250-lb (GP) bomb (UK) 13, 17, 22, 26, 46, 56, 65, 76, 77, 86, **90**, **92**
  250-lb depth charge (UK) 68, 71
  Mk XII torpedo (UK) **17**, **21**, 26, 27, **27**, 32, **37(93)**, **39(93)**, 51, 52, 57, 58, 59, 60, 61, 62, 63, **63**, **69**, **81**
  RP-3 60-lb rocket (UK) **43(94)**, 83
  SAP bomb (UK) 13, 16, 19, 51
weather conditions 12–14, 16–18, 22, 52, 56–60, 69, 70

FRONT COVER
A Swordfish Mk I of 816 NAS bursts into clear weather over Ofotfjord during the Second Naval Battle of Narvik on 13 April 1940. A striking force of Swordfish from 816 and 818 NASs was detailed to join the attack on trapped Kriegsmarine warships alongside Royal Navy destroyers and the battleship HMS *Warspite*. The Swordfish had to fly through the narrows at the entrance to the fjord at low level thanks to a cloud base of just a few hundred feet and snow squalls that reduced visibility to almost nothing. As they neared Narvik, the cloud base lifted and aircrews were greeted to the sight of Royal Navy warships going into battle, which they enthusiastically joined, dive-bombing the enemy vessels with 250-lb bombs (*Cover Artwork by Gareth Hector*)

TITLE PAGES
King George VI inspects a Swordfish Mk II with its crew at Royal Naval Air Station (RNAS) Hatston during a four-day visit to the Home Fleet's anchorage at Scapa Flow in August 1943 (*Author's Collection*)

Acknowledgements
The Author is indebted to Andreas Biermann, editor of the Crusader Project website (rommelsriposte.com), Ian Gazeley, Navy Wings, Philip Ryley, David McNaught, BAE Systems Brough Heritage and the late Brian Ryley and Peter Menzies.

OSPREY PUBLISHING

Bloomsbury Publishing Plc
Kemp House, Chawley Park, Cumnor Hill, Oxford OX2 9PH, UK
Bloomsbury Publishing Ireland Limited,
29 Earlsfort Terrace, Dublin 2, D02 AY28, Ireland
1385 Broadway, 5th Floor, New York, NY 10018, USA
E-mail; info@ospreypublishing.com
www.ospreypublishing.com

OSPREY is a trademark of Osprey Publishing Ltd

First published in Great Britain in 2025
This electronic edition published in 2025 by Bloomsbury Publishing Plc

© Osprey Publishing Ltd, 2025

All rights reserved. No part of this publication may be: i) reproduced or transmitted in any form, electronic or mechanical, including photocopying, recording or by means of any information storage or retrieval system without prior permission in writing from the publishers; or ii) used or reproduced in any way for the training, development or operation of artificial intelligence (AI) technologies, including generative AI technologies. The rights holders expressly reserve this publication from the text and data mining exception as per Article 4(3) of the Digital Single Market Directive (EU) 2019/790

A catalogue record for this book is available from the British Library.

ISBN: PB 9781472865106; eBook 9781472865113; ePDF 9781472865083; XML 9781472865090

Edited by Tony Holmes
Cover Artwork by Gareth Hector
Aircraft Profiles by Janusz Światłoń
Index by Fionbar Lyons
Typeset by PDQ Digital Media Solutions, UK

Osprey Publishing supports the Woodland Trust, the UK's leading woodland conservation charity.

To find out more about our authors and books visit **www.ospreypublishing.com**. Here you will find extracts, author interviews, details of forthcoming events and the option to sign up for our newsletter.

For product safety related questions contact productsafety@bloomsbury.com